

Fred James

Chief Regulatory Officer

Phone: 604-623-4046

Fax: 604-623-4407

bchydroregulatorygroup@bchydro.com

April 30, 2021

Mr. Patrick Wruck
Commission Secretary and Manager
Regulatory Support
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Mr. Wruck:

**RE: British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Mandatory Reliability Standards (MRS)
Assessment Report No. 14 (Report)**

BC Hydro writes to the BCUC to provide its Report dated April 30, 2021 pursuant to section 125.2(3) of the *Utilities Commission Act*. BC Hydro is providing an electronic copy of the Report to registered entities in the British Columbia (**B.C.**) MRS program.

The Report presents the reliability impacts, suitability, standard applicability and potential costs of adopting eight new and revised/replacement reliability standards (**Revised Standards**). There are no retired reliability standards assessed. In the Report, BC Hydro recommends that all eight of the Revised Standards are suitable for adoption in B.C.

The North American Electric Reliability Corporation Glossary of Terms dated October 8, 2020 contains no new, revised or retired terms related to reliability standards adopted in B.C. or assessed in the Report.

BC Hydro has included a proposed process for the BCUC's adoption of the recommended Revised Standards in section 3.2 of the Report.

A separate assessment of the reliability standards with dependency and/or actions solely by the Planning Coordinator function (**PC Assessment Report**) is being filed with the BCUC separately from this Report. BC Hydro is conducting a brief additional consultation period with respect to the standards being assessed in the PC Assessment Report as a result of new information and corrections to initial information being identified. BC Hydro currently expects to conclude that consultation by mid-May and file the PC Assessment Report at the end of May.

As explained in section 2.1 of the Report, in BCUC Order No. R-31-20, the BCUC approved BC Hydro's extension request to provide an assessment report to the BCUC by May 1, 2021 for the reliability standards adopted by FERC within the period between, and including, December 1, 2019 and November 30, 2020 (the **2020 Assessment Period**). Four reliability standards – specifically, MOD 033 2, PRC 006 4, TPL 001 5.1, and TPL 007 4 (together, the **PC Revised Standards**) – which were FERC approved within the 2020 Assessment Period, are being assessed in the PC Assessment Report rather than in this Report. As a result, BC Hydro respectfully requests that the BCUC grant a further extension as it applies to the assessment of the PC Revised Standards to May 31, 2021.

BC Hydro requests that the BCUC proceed with its review of this Report and issue its final order independent of the PC Assessment Report.

For further information, please contact Lynne Foster at 604-623-3918 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Fred James
Chief Regulatory Officer

al/rh

Enclosure (1)

Copy to: B.C. MRS Program Registered Entities.

**Mandatory Reliability Standards
Assessment Report No. 14**

April 2021

Table of Contents

1	Introduction	3
1.1	Purpose of Report	3
1.2	Contents of the Report	3
2	Special Considerations.....	4
2.1	Reliability Standards with Reliability Related Requirements for Planning Authority (PA)/Planning Coordinator (PC).....	4
2.1.1	The FAC-002-3 Revised Standard.....	6
2.1.2	The MOD-031-3 Revised Standard	6
2.1.3	The NUC-001-4 Revised Standard	7
2.1.4	The PRC-024-3 Revised Standard	7
3	Report Summary	8
3.1	Draft Order	9
3.2	Proposed Process.....	10
4	Standards Assessment Process used in the Report	10
4.1	Identification of Standards for Review and Inclusion in the Report	10
4.2	Consultation	11
5	Assessment of Individual Standards	14
5.1	Analytical Approach to Assessment of Reliability Impact, Suitability, Cost of Adoption and Application	15
5.1.1	Analytical Approach in Assessing Adverse Reliability Impacts	15
5.1.2	Analytical Approach for the Suitability Assessment	16
5.1.3	Analytical Approach for the Cost Assessment	16
5.1.4	Analytical Approach for the Application of the Reliability Standards	17
5.2	Initial Screening of the Standards for Adverse Reliability Impacts and Suitability.....	17
5.3	Summary of Final Assessment of the Standards Assessed in the Report	19
6	NERC Glossary of Terms.....	27
7	Conclusions.....	27

List of Tables

Table 1	B.C. MRS Program Registered Entity List.....	11
---------	--	----

Table 2	Initial Screening of Revised Standards for Adverse Reliability Impact and Suitability	19
Table 3	Final Assessment Summary of Revised Standards	21

Appendices

Appendix A-1	List of Assessed Reliability Standards and NERC Glossary Terms
Appendix A-2	Reliability Standards Assessed by BC Hydro
Appendix B	NERC Glossary of Terms used in Reliability Standards, Updated October 8, 2020
Appendix C-1	BC Hydro Feedback Survey Forms
Appendix C-2	Instructions for Registered Entities
Appendix C-3	External Stakeholder Feedback
Appendix D	Draft Order

1 Introduction

1.1 Purpose of Report

Pursuant to the requirements of section 125.2(3) of the *Utilities Commission Act* (**UCA**), British Columbia Hydro and Power Authority (**BC Hydro**) provides this Mandatory Reliability Standards (**MRS**) Assessment Report No. 14 (**Report**), pertaining to the Bulk Electric System (**BES**) in British Columbia (**B.C.**), to the British Columbia Utilities Commission (**BCUC** or **Commission**) for consideration regarding the reliability impacts, suitability, potential costs and reliability standard applicability of adopting eight (one new and seven revised) reliability standards (**Revised Standards**).¹ There are no reliability standards being retired in the Report. This report does not include the adoption or retirement of defined terms from the North American Electric Reliability Corporation (**NERC**) Glossary of Terms (**NERC Glossary**) dated October 8, 2020 as the NERC Glossary contains no new, revised or retired terms (**Revised Terms**) related to reliability standards adopted in B.C. or the Revised Standards.

1.2 Contents of the Report

The Report is organized as follows:

- Section [2](#) outlines special considerations BC Hydro raises for the BCUC's consideration;
- Section [3](#) summarizes the Report findings, provides an outline of the Draft Order and recommends a proposed assessment process;

¹ BC Hydro notes that there are 12 reliability standards that were FERC approved with an effective Order in the 2020 Assessment Period (defined below). However, as discussed in section [2.1](#), four of these reliability standards are dependent on and/or require actions solely by the PC function and so they are being assessed in the Planning Coordinator Assessment Report being filed separately from this Report.

-
- 1 • Section [4](#) explains BC Hydro’s assessment process, including its consultation
2 with stakeholders;
 - 3 • Section [5](#) summarizes BC Hydro’s approach to assessing the Revised
4 Standards, and provides the results of that assessment;
 - 5 • Section [6](#) summarizes the results of the assessment of the Revised Terms; and
 - 6 • Section [7](#) provides BC Hydro’s conclusions.

7 **2 Special Considerations**

8 BC Hydro raises the following special consideration for the Report:

9 **2.1 Reliability Standards with Reliability Related Requirements for** 10 **Planning Authority (PA)/Planning Coordinator (PC)**

11 In the Reasons for Decision for Order No. R-41-13 (Appendix A, page 20), the
12 BCUC found that the issue in relation to the extent of the PA/PC
13 operations/footprint in B.C. was beyond the scope of the MRS Assessment
14 Report No. 6 review process. As such, those reliability standards were held in
15 abeyance pending the conclusion of a separate process regarding the
16 implementation of the PC function. BCUC Order Nos. R-32-14, R-38-15,
17 R-32-16, R-39-17, R-33-18, and R-19-20 addressing the reliability standards
18 applicable to PCs in MRS Assessment Report Nos. 7, 8, 9, 10, 11 and 13,
19 respectively, were consistent with this approach for reliability standards that
20 reference the PC function. MRS Assessment Report No. 12 did not contain any
21 PC function references.

22 Separate from this Report, BC Hydro will be filing with the BCUC an assessment
23 of the reliability standards that have dependency on and/or require actions solely
24 by the PC function (**PC Assessment Report**). The PC Assessment Report will
25 assess the adoption of those reliability standards that are currently wholly or
26 partly held in abeyance pursuant to previous BCUC orders. The PC Assessment

1 Report will also assess four reliability standards that were FERC approved with
2 an effective Order within the period between, and including, December 1, 2019
3 and November 30, 2020 (the **2020 Assessment Period**), which are dependent
4 on and/or require actions solely by the PC function – specifically, MOD-033-2,
5 PRC-006-4, TPL 001-5.1, and TPL-007-4 (together, the **PC Revised**
6 **Standards**). BC Hydro expects to file the PC Assessment Report with the BCUC
7 by May 31, 2021.

8 In BCUC Order No. R-31-20, the BCUC approved BC Hydro’s extension request
9 to provide an assessment report to the BCUC on the reliability standards adopted
10 by FERC within the 2020 Assessment Period by May 1, 2021. Given that the PC
11 Revised Standards are being assessed in the PC Assessment Report rather than
12 in this Report, BC Hydro respectfully requests that the BCUC grant a further
13 extension as it applies to the assessment of the PC Revised Standards to
14 May 31, 2021.²

15 Four of the eight Revised Standards considered in this Report – the FAC-002-3,
16 MOD-031-3, NUC-001-4, and PRC-024-3 Revised Standards – reference the PC
17 function, however, they are not dependent on inputs by or actions solely by the
18 PC function. Therefore, they are being assessed in this Report rather than in the
19 PC Assessment Report, and they are discussed below in turn.

20 BC Hydro requests the BCUC proceed with the review of this Report separately
21 and independently from the PC Assessment Report. It is not necessary to review

² For greater clarity, a number of the standards being assessed in the PC Assessment Report have been held in abeyance over a number of years and there is no timeline under which BC Hydro is currently required to file an assessment report with respect to those standards. However, because the PC Revised Standards were approved by FERC within the 2020 Assessment Period, and because those standards are being assessed in the PC Assessment Report which will not be filed by May 1, 2021, BC Hydro requires a brief extension with respect to the assessment of those standards.

1 the PC Assessment Report prior to the BCUC issuing its final order regarding this
2 Report.³

3 **2.1.1 The FAC-002-3 Revised Standard**

4 None of the requirements of FAC-002-3 are solely dependent on actions by the PC
5 function and they apply independently to the Transmission Planner (**TP**) function as
6 well. Similarly, there are requirements that give the option to applicable registered
7 entities to coordinate and cooperate on studies with either the PC function or the TP
8 function, but not necessarily with both functions. The FAC-002-3 Revised Standard
9 requirements are unchanged from the preceding FAC-002-2 reliability standard
10 except for the removal of the Load Serving Entity (**LSE**) function from Requirement 3
11 as an applicable entity to which the requirement previously applied. The FAC-002-2
12 reliability standard was adopted by the BCUC pursuant to Order No. R-38-15 as part
13 of MRS Assessment Report No. 8 and has been effective in B.C. since
14 October 1, 2015. Therefore, BC Hydro recommends that the requirements of the
15 FAC-002-3 Revised Standard be adopted in B.C.

16 **2.1.2 The MOD-031-3 Revised Standard**

17 The requirements of the MOD-031-3 Revised Standard apply to either the PC
18 function or the Balancing Authority (**BA**) function, but not necessarily to both. The
19 MOD-031-3 Revised Standard requirements are unchanged from the preceding
20 MOD-031-2 reliability standard except for the removal of the need to identify entities
21 performing the LSE function per Requirement 1.1. The MOD-031-2 reliability
22 standard was adopted by the BCUC pursuant to Order No. R-38-15 as part of MRS
23 Assessment Report No. 10 and has been effective in B.C. since April 1, 2018.

³ BC Hydro notes that two registered entities have provided feedback in this Report on various PC-related impacts of a specific standard and/or have referred to feedback provided in the separate consultation that was held with respect to the standards being assessed in the PC Assessment Report. Where applicable, BC Hydro has identified this feedback but confirms that in each case, it is not necessary for the BCUC's consideration of the standards being recommended for adoption in this Report. See [Table 3](#) for further details.

1 Therefore, BC Hydro recommends that the requirements of the MOD-031-3 Revised
2 Standard be adopted in B.C.

3 **2.1.3 The NUC-001-4 Revised Standard**

4 The requirements of the NUC-001-4 Revised Standard apply to Nuclear Plant
5 Generator Operators and their associated Transmission Entity functions, which is
6 inclusive of the PC function. However, there are no nuclear facilities in B.C. and
7 hence there are no Nuclear Plant Generator Operators to which the NUC-001-4
8 Revised Standard would apply. As a result, there would be no adverse reliability
9 impact or suitability issues if the standard is adopted. Therefore, BC Hydro
10 recommends that the requirements of the NUC-001-4 Revised Standard be adopted
11 in B.C.⁴

12 **2.1.4 The PRC-024-3 Revised Standard**

13 Requirements 3 and 4 of the PRC-024-3 Revised Standard require the submittal of
14 information to the PC and/or TP function, but there are no actions required by the
15 PC function per the standard. These requirements remain unchanged from the
16 preceding PRC-024-2 reliability standard. The PRC-024-2 reliability standard was
17 adopted by the BCUC pursuant to Order No. R-32-16 as part of MRS Assessment
18 Report No. 9 and became fully effective in B.C. as of April 1, 2021. Therefore,
19 BC Hydro recommends that the requirements of the PRC-024-3 Revised Standard
20 be adopted in B.C.

⁴ In BCUC Order No. G-67-09, the BCUC adopted NUC-001-1 stating that “although provincial energy policy prevents nuclear standard NUC-001-1 from having application in British Columbia, the Assessment Report did not raise concerns regarding the content of the standard and therefore to maintain consistency with other jurisdictions and for administrative efficiency, the Commission concludes that this standard should be adopted”. On this basis, BC Hydro continues to adopt NUC standards that do not have adverse reliability impacts or suitability issues.

3 Report Summary

BC Hydro is recommending the adoption of all eight Revised Standards assessed in the Report. The eight Revised Standards being recommended for adoption in B.C. would entirely supersede seven⁵ reliability standards adopted in B.C. by Order Nos. R-38-15, R-32-16A, R-39-17, and R-33-18.

BC Hydro has concluded that the eight Revised Standards recommended for adoption will preserve or enhance the reliability of the BES in B.C., and thus are in the public interest and are suitable for adoption in B.C.

BC Hydro has assessed its estimated incremental one-time and ongoing annual costs of achieving and maintaining compliance with the Revised Standards being recommended for adoption in B.C. BC Hydro's responses are reproduced in full in Appendix C-1 of the Report. Consistent with the approach taken in previous MRS assessment reports, BC Hydro has also sought input from B.C. MRS registered entities regarding their estimated incremental one-time and annual ongoing costs associated with achieving and maintaining compliance with the Revised Standards recommended for adoption.

A complete list of the registered entities with whom BC Hydro consulted is provided in [Table 1](#). A detailed breakdown of the estimated incremental one-time and ongoing costs reported by BC Hydro and the registered entities is provided in [Table 3](#).

Registered entities' responses are reproduced in full in Appendix C-3.

On the basis of BC Hydro's own assessment and the responses received from those registered entities providing cost estimates, the cumulative cost for B.C. registered entities to achieve and maintain compliance with the eight Revised Standards being recommended for adoption in B.C. is estimated to be a minimum of \$728,000 with respect to one-time costs, and a minimum of \$55,000 on an annual ongoing basis.

⁵ Refer to Appendix A-1 for a list of BCUC approved reliability standards that would be superseded by reliability standards assessed in the Report.

1 With respect to the costs considered herein, BC Hydro is of the view that these
2 expenditures are necessary, given that they largely relate to the development and
3 implementation of solutions to protect the confidentiality and integrity of data used
4 for Real-Time Assessment and Real-time monitoring between inter-entity and
5 intra-entity Control Centres.

6 The remaining costs are generally associated with reviews and revisions of
7 procedure documentation, training, and change management.

8 **3.1 Draft Order**

9 The Draft Order attached to the Report as Appendix D, includes the following draft
10 attachments:

- 11 • Attachment A – Provides a table that lists the Revised Standards and the
12 BCUC approved reliability standards to be superseded by the Revised
13 Standards. The table includes recommended effective dates for these changes
14 to allow for an implementation period for registered entities to adjust business
15 processes to achieve compliance;
- 16 • Attachment B – Provides a list of all the reliability standards that would be in
17 force in B.C., including those assessed in the Report and those reliability
18 standards held in abeyance. The table also provides the BCUC Order under
19 which each of the reliability standards was adopted and their effective dates;
20 and
- 21 • Attachment C – For ease of reference, BC Hydro is including Table 1 in
22 Attachment C, which lists all the B.C.-specific exceptions to the NERC
23 Glossary, starting from MRS Assessment Report No. 6.⁶

⁶ Refer to Table 2 in Attachment C: All BCUC Orders prior to Order No. R-41-13 for MRS Assessment Report No. 6 adopted the entire NERC Glossary effective as of the date of the Order.

1 **3.2 Proposed Process**

2 This is the fourteenth annual MRS assessment report to be submitted to the BCUC.
3 The BCUC is obligated by section 125.2(5) of the UCA to make the Report publicly
4 available and to consider any comments it receives in respect of the Report.

5 To make the Report publicly available, BC Hydro will publish a notice of the Report
6 on its public website and send a letter of notification to all B.C. MRS registered
7 entities with whom it originally consulted in connection with the preparation of the
8 Report, as listed in [Table 1](#).

9 BC Hydro will respond to any comments on the Report. The BCUC would then
10 determine whether all the issues raised in the comment process have been dealt
11 with to its satisfaction. If so, no further process would be required. If not, then a
12 written process could be established to deal with any outstanding issues. Upon
13 completion of the process, the BCUC would determine whether the Revised
14 Standards should be adopted in B.C.

15 **4 Standards Assessment Process used in the Report**

16 **4.1 Identification of Standards for Review and Inclusion in the** 17 **Report**

18 For the Report, BC Hydro has assessed reliability standards that were FERC
19 approved with an effective Order within the 2020 Assessment Period, with the
20 exception of the PC Revised Standards that are being assessed in the PC
21 Assessment Report, as discussed in section [2.1](#).

22 A November 30, 2020 cut-off date is required to allow time for BC Hydro to assess
23 the reliability standards identified in the 2020 Assessment Period and consult with
24 registered entities regarding any impacts to them in achieving compliance with those
25 reliability standards. For efficiency, rather than submitting a separate assessment
26 report for each reliability standard, BC Hydro batches reliability standards and files

1 one assessment report with the BCUC each year. This same approach has been
 2 used in previous MRS assessment reports.

3 On October 26, 2020, BC Hydro requested from the BCUC an extension to allow it
 4 to include in its assessment certain reliability standards adopted more than one year
 5 prior to the anticipated filing date of the Report. This extension request was
 6 approved pursuant to BCUC Order No. R-31-20 on November 12, 2020.

7 Should BC Hydro or the BCUC determine that a particular reliability standard is
 8 sufficiently critical to reliability that it warrants immediate implementation, BC Hydro
 9 would file a reliability standard-specific assessment report and not wait until its next
 10 'batch' assessment report. There are no such reliability standards that have been
 11 identified within the 2020 Assessment Period.

12 In the Report, BC Hydro is assessing the eight Revised Standards identified in
 13 [Table 2](#). Each of the Revised Standards is either new or a revision to a previously
 14 adopted reliability standard(s) in B.C. A list of all of the Revised Standards is also
 15 provided in Appendix A-1 and includes a reference to the FERC Order approving
 16 them, along with the date of the Order. Appendix A-2 includes clean and red-lined
 17 copies of the Revised Standards.

18 **4.2 Consultation**

19 BC Hydro consulted with the B.C. MRS registered entities listed below in [Table 1](#).

20 **Table 1 B.C. MRS Program Registered Entity List**

Registered Entities	Registered Entities (Continued)
ARC Resources Ltd. (ARCR)	Intercontinental Pulp Mill (IPML)
Bear Mountain Wind Limited Partnership (BMWL)	Jimmie Creek Limited Partnership (JCLP)
British Columbia Hydro and Power Authority (BCHA)	Lehigh Cement (LHC)
Cape Scott Wind LP (CSCO)	Meikle Wind Energy Limited Partnership (MWEL)

Registered Entities	Registered Entities (Continued)
Capital Power Limited Partnership (CPLP)	Northwood Pulp Mill (NPM)
Cariboo Pulp & Paper Company (CPPC)	Prince George Pulp & Paper Mill (PGPP)
Catalyst Paper - Crofton Division (CPCD)	Quesnel River Pulp, West Fraser Mills Ltd. (QUES)
Catalyst Paper - Port Alberni Division (CPPAD)	Rio Tinto Alcan (RTA)
Catalyst Paper - Powell River Division (CPPR)	Toba Montrose General Partnership (TMGP)
Coast Mountain Hydro Limited Partnership (CMHL)	Tolko Industries Limited (TIL)
Dokie General Partnership (DGP)	Upper Lillooet River Power LP (ULRP)
FortisBC Inc. (FBC)	V.I. Power Limited Partnership (VIPL)
Howe Sound Pulp & Paper Corporation (HSPP)	WESCUP (WESC)
Harrison Hydro Limited Partnership (HHLP)	West Fraser Mills Ltd. (WFM)
Innergex Renewable Energy Inc. (CWEI)	

1 Each registered entity on the list was originally issued an email package on
 2 December 24, 2020 advising that 17 Revised Standards and five Retired Standards
 3 would be assessed in the Report. As discussed below, the list of Revised Standards
 4 assessed was later corrected.

5 The email packages contained instructions and a link to the BC Hydro Reliability
 6 Compliance internet website where one survey form (for Revised Standards and
 7 Retired Standards) were provided for completion by entities (refer to Appendix C).
 8 Entities were asked to complete and return the survey forms to BC Hydro by end of
 9 day February 28, 2021. On January 13, 2021, BC Hydro held an informational
 10 session via teleconference for all registered entities in B.C.

11 The entities were asked to provide information for each Revised Standard and
 12 Retired Standard as follows:

- 13 (a) Indicate whether there were either no changes to the entity's processes, or
 14 state the high-level incremental activities or new activities that needed to be
 15 completed to become compliant;

1 (b) For each incremental or new activity, indicate associated estimated costs in
2 dollar amounts, and identify the assumptions used in developing estimates. The
3 following costs were to be considered:

- 4 ▶ Activities where a one-time capital cost will incur; and
- 5 ▶ Activities where there are ongoing annual costs associated with compliance;
6 and

7 (c) Include an assessment of the amount of time reasonably required to come into
8 compliance with the Revised Standard and Revised Term once adopted by the
9 BCUC. The time should be reflective of any incremental or new activities
10 identified.

11 Including BC Hydro, a total of 29 registered entities were contacted. Attempts were
12 also made to contact Encana as a registered entity as their contact information had
13 gone stale. BC Hydro attempted to obtain Encana's contact information from the
14 BCUC only to find that the BCUC also had the same stale information. The
15 11 entities who responded were: (1) BC Hydro; (2) Cape Scott Wind LP;
16 (3) Innergex Renewable Energy Inc.; (4) Dokie General Partnership; (5) Jimmie
17 Creek Limited Partnership; (6) Toba Montrose General Partnership; (7) Upper
18 Lillooet River Power LP; (8) FortisBC Inc.; (9) Northwood Pulp Mill; (10) Harrison
19 Hydro Limited Partnership; and (11) WESCUP. Innergex Renewable Energy Inc.,
20 Dokie General Partnership, Jimmie Creek Limited Partnership, Toba Montrose
21 General Partnership, Upper Lillooet River Power LP, and Harrison Hydro Limited
22 Partnership provided a single consolidated survey response as Innergex Renewable
23 Energy Inc. BC Hydro's responses are attached in full in Appendix C-1 and
24 registered entities' responses are attached in full in Appendix C-3.

25 After the registered entities provided their feedback, it came to BC Hydro's attention
26 that five of the Revised Standards (INT-006-5, INT-009-3, IRO-002-7, PRC-004-6,
27 and TOP-001-5) and all five Retired Standards (INT-004-3.1, INT-010-2.1,

1 MOD-020-0, IRO-002-6 and INT-009-2.1) for which feedback was sought were
2 approved by FERC with an effective date of December 14, 2020⁷, which is after the
3 2020 Assessment Period ending on November 30, 2020. BC Hydro therefore
4 removed these five Revised Standards and five Retired Standards from the scope of
5 this Report. They will instead be assessed in MRS Assessment Report No. 15. In
6 addition, the four PC Revised Standards – MOD-033-2, PRC-006-4, TPL 001-5.1,
7 and TPL-007-4 – were subsequently removed from the assessment scope of this
8 Report and will instead be assessed in the PC Assessment Report being filed
9 separately. Please see section [2.1](#) of this Report for further discussion of the PC
10 Revised Standards.

11 **5 Assessment of Individual Standards**

12 As noted previously, the eight Revised Standards assessed in the Report are listed
13 in Table 1 in Appendix A-1. Clean and red-lined copies of the Revised Standards are
14 listed in Appendix A-2.

15 BC Hydro has assessed the eight Revised Standards against the criteria set out in
16 section 125.2(3) of the UCA.

- 17 • Section [5.1](#) summarizes BC Hydro's approach to addressing these criteria;
- 18 • Section [5.2](#) provides a description of each Revised Standard and an
19 explanation of the reliability, suitability and applicability issues, along with
20 BC Hydro's conclusions; and
- 21 • Section [5.3](#) addresses the cost assessment and summarizes BC Hydro's final
22 assessment of all the Revised Standards.

⁷ FERC Order No. 873.

1 **5.1 Analytical Approach to Assessment of Reliability Impact,** 2 **Suitability, Cost of Adoption and Application**

3 The analytical approach taken to evaluate reliability standards identified in the
4 Report against the legislated assessment criteria has not changed from that used in
5 previous MRS assessment reports. Compliance-related provisions included in the
6 reliability standards are not applicable to the meaning of “reliability standards”
7 defined in section 125.2 of the UCA. As a result, BC Hydro does not assess these
8 compliance-related provisions in the Report. To indicate that BC Hydro does not
9 assess this part of the reliability standards, the compliance-related provisions have
10 been struck-through in the clean and redline versions of each Revised Standard
11 included in Appendix A-2. Nevertheless, BC Hydro recognizes that the
12 compliance-related provisions may be adopted by the BCUC.

13 In addition, the BCUC provides effective dates for B.C. entities to come into
14 compliance with the Revised Standards; therefore, the effective dates stated in
15 the Revised Standards are not applicable in B.C. Accordingly, a strike-through of
16 section A.5 – Effective Date – is included in the clean and redlined versions of each
17 reliability standard included in Appendix A-2.

18 **5.1.1 Analytical Approach in Assessing Adverse Reliability Impacts**

19 BC Hydro has used the same approach in assessing adverse reliability impacts that
20 was used in prior MRS assessment reports. This approach relies on a determination
21 that those reliability standards that have either: (i) performance requirements that
22 are not currently employed in B.C., or (ii) requirements as stringent, or more
23 stringent than requirements or practices currently employed in B.C. will, by definition,
24 have neutral or positive impacts on the reliability of the BES in B.C. Consequently,
25 BC Hydro’s approach is to identify performance requirements associated with new,
26 or revisions to, reliability standards that are less stringent than the existing reliability
27 standards already adopted in B.C., or practices otherwise mandated in utility tariffs
28 or business practices approved or endorsed by the BCUC.

1 **5.1.2 Analytical Approach for the Suitability Assessment**

2 The Report uses the same criteria to assess the Revised Standards that were
3 developed for the previous MRS assessment reports. The two criteria used for this
4 analysis are set out below:

5 (a) “Administrative Suitability” means that the requirements in the reliability
6 standard are fit and appropriate for implementation in light of the policy and
7 regulatory framework in B.C. The requirements can be implemented without
8 requiring the ongoing involvement of NERC, the U.S. Government, or other
9 extra-jurisdictional entities in such a manner as would impair the operation and
10 enforcement of the requirement in B.C. If one or more of the requirements in
11 the reliability standard incorporate by reference reliability standards not yet
12 adopted in other jurisdictions, the remaining requirements in the reliability
13 standard can still be implemented presently in B.C. without giving effect to the
14 particular requirement(s) containing the cross reference; and

15 (b) “Technical Suitability” means that the requirements in the reliability standard are
16 fit and appropriate for implementation in B.C., taking into consideration the
17 unique geographical, structural, design, and functional aspects of the B.C. BES
18 and the assets that support the reliable operation of this system.

19 **5.1.3 Analytical Approach for the Cost Assessment**

20 BC Hydro’s approach to assess the potential costs of the Revised Standards in the
21 Report is consistent with the approach used to assess reliability standards in
22 previous MRS assessment reports. The objective is to provide a conceptual estimate
23 of the minimum expected costs of adopting reliability standards in B.C. sufficient to
24 inform the BCUC’s public interest assessment. Accordingly, only the costs that B.C.
25 entities will potentially incur to achieve and maintain full compliance with the Revised
26 Standards were assessed. Any costs associated with B.C. entities attaining or
27 maintaining compliance with pre-existing reliability standards in B.C. were excluded.

1 **5.1.4 Analytical Approach for the Application of the Reliability Standards**

2 Regarding the criterion contained in paragraph 125.2(3)(c.1) of the UCA, BC Hydro's
3 approach to assess the application of the Revised Standards to persons or persons
4 in respect of specified equipment in the Report is consistent with the approach used
5 to review reliability standards in previous MRS assessment reports.

6 BC Hydro assesses the Applicability section contained in the Introduction of the
7 Revised Standard at section A.4, to ensure consistency with the functional
8 registration categories contained in the B.C. MRS program, as contained in the MRS
9 Rules of Procedure in B.C. BC Hydro considers this approach to satisfy the criterion
10 contained in paragraph 125.2(3)(c.1) of the UCA.

11 Any issues regarding the applicability of reliability standards to particular entities can
12 be addressed in the context of the BCUC's registration and compliance regime.

13 **5.2 Initial Screening of the Standards for Adverse Reliability** 14 **Impacts and Suitability**

15 In terms of the assessment of the Revised Standards against the reliability and
16 suitability criteria, BC Hydro first performed an initial screening against the criteria
17 described in section [5.1](#) to identify issues for further examination. This initial
18 screening does not purport to be BC Hydro's final assessment.

19 The results of BC Hydro's initial screening of the Revised Standards for potential
20 issues regarding adverse reliability impacts and suitability are summarized below in
21 [Table 2](#), which includes:

- 22 • The "Standard" column, which identifies the Revised Standards assessed;
- 23 • The "Changed from BCUC Approved Standard" column, which identifies
24 whether the Revised Standard is a revision to a reliability standard already
25 adopted by the BCUC;

-
- 1 • The “Adverse Impact” column, which identifies potential issues relating to
2 adverse reliability impact;
- 3 • The “Suitability Issues” columns, which identify potential suitability issues:
- 4 ▶ “Requires NERC Approval/Participation”: Identifies a potential Technical or
5 Administrative Suitability issue as related to continued reliance on approvals
6 by NERC and/or participation by NERC to implement the requirements of a
7 given reliability standard;
- 8 ▶ “Requires Provisions of Information to NERC or the WECC”: Identifies a
9 potential Technical or Administrative Suitability issue that requires ongoing
10 reporting of information to NERC or WECC (i.e., lack of clarity on reporting
11 instructions, references to undefined processes or reporting tools, etc.);
- 12 ▶ “Refers to Standard not yet FERC Approved”: Identifies a potential
13 Technical or Administrative Suitability issue with a Revised Standard as it
14 contains one or more references to other reliability standards that have not
15 yet been approved by FERC in the U.S., and thereby not assessed for
16 adoption in B.C., which would affect the ability to implement one or more
17 requirements of the Revised Standard; and
- 18 ▶ “Other Suitability Issues”: Identifies whether there are any other
19 Administrative Suitability, Technical Suitability or reliability standard
20 Applicability issues identified, apart from the categories already defined, that
21 would affect the ability to implement the requirements of
22 the Revised Standard.

1
2
3

Table 2 Initial Screening of Revised Standards for Adverse Reliability Impact and Suitability

No.	Standard	Changed from BCUC Approved Standard	Adverse Impact	Suitability Issues				
				Requires NERC Approval/ Participation	Requires Provisions of Information to NERC or WECC		Refers to Standard not yet FERC Approved	Other Suitability/ Applicability Issues
					To NERC	To WECC		
1	BAL-003-2	Yes	No	No	Yes ⁸	No	No	No
2	CIP-012-1	New	No	No	No	No	No	No
3	FAC-002-3	Yes	No	No	No	No	No	Yes ⁹
4	IRO-010-3	Yes	No	No	No	No	No	No
5	MOD-031-3	Yes	No	No	No	Yes ¹⁰	No	Yes ⁹
6	NUC-001-4	Yes	No	No	No	No	No	Yes ⁹
7	PRC-024-3	Yes	No	No	No	No	No	Yes ⁹
8	TOP-003-4	Yes	No	No	No	No	No	No

4
5

5.3 Summary of Final Assessment of the Standards Assessed in the Report

6
7

BC Hydro’s final assessment, based on responses from B.C. registered entities, including BC Hydro, is summarized below in [Table 3](#), which includes:

8
9

- BC Hydro’s final assessment as to whether the adoption of the Revised Standards will give rise to adverse reliability consequences;¹¹

⁸ Revised Standard BAL-003-2 Requirements 1, 2, 4, and Attachment A contain requirements, attachments referenced from requirements, or identifies applicable Facilities which contain instructions to either follow methods specified by the Electric Reliability Organization (ERO), provide information to the ERO, and/or obtain approvals from the ERO. In the U.S., NERC has been established to be the ERO; however, in B.C., there is no such ERO established. There is no compliance obligation in B.C. to follow NERC’s processes, provide information to NERC, or obtain approvals from NERC. Any adherence pertaining to the ERO for a given requirement is voluntary and is of no force or effect in B.C. Therefore, there is no perceived suitability issue that would impact a B.C. entity’s ability to comply with the identified reliability standard requirements.

⁹ Revised Standards contain reliability related requirements for the PA/PC function. Please refer to section [2.1](#) of the Report.

¹⁰ Requirement 3 of the MOD-031-3 Revised Standard requires the provision of data to the applicable Regional Entity (which is WECC in B.C.) upon request within a specific timeframe, unless otherwise agreed upon by the parties. There are no perceived suitability issues that would impact a B.C. entity’s ability to comply with the identified reliability standard requirements.

¹¹ No adverse reliability consequences were identified during the final assessment.

-
- 1 • BC Hydro’s final assessment as to the suitability of the Revised Standards,
2 based on the criteria described in section [5.1.2](#);
- 3 • BC Hydro’s and registered entities estimated incremental one-time and ongoing
4 annual costs to achieve and maintain compliance; and
- 5 • BC Hydro’s recommended effective dates, based on comments made by
6 registered entities who responded to the stakeholder survey. BC Hydro
7 recommends that these recommended effective dates be adopted by the BCUC
8 to replace section A.5-Effective Date in each of the Revised Standards. For
9 informational purposes only, feedback that does not align with BC Hydro’s
10 recommended effective dates are listed under ‘Feedback Exceptions’ where
11 applicable.
- 12 BC Hydro’s final assessment as to the Application of the Revised Standards is
13 included as a separate paragraph at the end of section [5.3](#).

1

Table 3 Final Assessment Summary of Revised Standards

Standard	Suitability Issues	One-time Cost (\$)	Ongoing Cost (\$/Year)	Recommended Effective Date
BAL-003-2	None reported.	None reported.	None reported.	First day of the first calendar quarter, after BCUC adoption.
CIP-012-1	None reported.	<p>BC Hydro - R1: \$602,000; resources and testing required for implementation and to document intra communication links and processes between BC Hydro's Control Centres and inter communication links and processes between BC Hydro's Control Centres other entities (within British Columbia and external to British Columbia). Studies will be required for certain connections between BC Hydro and other entities (into the U.S, Fortis BC, Alcan for example) to evaluate and implement technical solutions.</p> <p>Fortis BC Inc. - R1: \$20,000 - \$40,000; FortisBC will need to protect the confidentiality and integrity of Real-time Assessment and Real-time monitoring data transmitted between control centres (FortisBC and BC Hydro). FortisBC documentation will need to be created and/or updated.</p> <p>WESCUP - R1: \$100,000 - \$200,000; Incremental change.</p>	<p>BC Hydro - R1: \$30,000; WESCUP - R1: \$25,000 - \$50,000</p>	<p>BC Hydro's Consolidated Recommendation: First day of the first calendar quarter that is 24-calendar-months after BCUC adoption.</p> <p>Feedback Exceptions: Fortis BC Inc. - Recommended effective date is 12 to 24 months after BCUC approval.</p> <p>WESCUP - One year after adoption by the BCUC.</p>

Standard	Suitability Issues	One-time Cost (\$)	Ongoing Cost (\$/Year)	Recommended Effective Date
FAC-002-3	<p>BC Hydro's Consolidated Comments: None⁹</p> <p>Cape Scott Wind LP – No incremental changes expected. However, it should be noted that it is impractical for entities to assess the impact of the PC function in relation to any standard or requirement when the structure and processes of the proposed PC are unknown. The implementation date should be contingent on the date that the BC Hydro Planning Coordinator becomes fully operational.¹².</p>	<p>Northwood Pulp Mill – R3: \$0; Already in compliance – Canfor – Northwood Pulp Mill and Transmission Planner “BC Hydro” have completed ‘Facilities Interconnection Studies’ previously and will continue to do so, if significant power generation/consumption capacity changes.¹³</p> <p>Fortis BC Inc. – See PC Feedback Spreadsheet for comments.¹⁴</p>	None reported.	<p>BC Hydro's Consolidated Recommendation: First day of the first calendar quarter that is three months after BCUC adoption.⁹</p> <p>Feedback Exceptions: Cape Scott Wind LP – One year from the date that Planning Coordinator becomes fully operational.¹²</p> <p>Fortis BC Inc. – See PC Feedback Spreadsheet for comments. PC Assessment Report feedback: <i>Recommended effective date immediately after BCUC approval.</i>¹⁴</p> <p>Innergex – Immediately after adoption by the BCUC.</p> <p>WESCUP – Immediately after adoption by the BCUC</p>

¹² BC Hydro acknowledges Cape Scott Wind LP's comments regarding the challenges of assessing PC function impacts without having an established structure in place. Further assessment will be performed under the PC Assessment Report regarding the PC functional impacts. BC Hydro would also like to clarify that it is currently not mapped to any other entity in B.C. regarding the PC function. No agreements have been established between BC Hydro or any other entities for BC Hydro to be their PC. Independent of the PC Assessment Report, BC Hydro is recommending adoption of FAC-002-3 under this Report 14 acknowledging that FAC-002-3 also can apply to Transmission Planners independent of the PC function. As the FAC-002-3 Revised Standard did not materially change in relation to the preceding reliability standard version FAC-002-2 in effect in B.C., BC Hydro does not perceive of any suitability impacts preventing adoption in B.C. BC Hydro therefore does not agree with Cape Scott Wind LP's proposed implementation timeframe and is recommending alignment with the FERC approved NERC implementation timeframe.

¹³ BC Hydro does not agree with Canfor Northwood Pulp Mill's statement that BC Hydro is its Transmission Planner. BC Hydro is a registered Transmission Planner under the BCUC MRS program and is thereby obligated under the currently adopted and effective FAC-002-2 reliability standard (Requirement 1) to study the reliability impact of interconnecting new generation, transmission, or electricity end-user Facilities and materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities. BC Hydro does not have any documented agreement in place with Northwood Pulp Mill to indicate that BC Hydro is performing Transmission Planner compliance functions on its behalf.

¹⁴ Please see Appendix C-3, 'PC Assessment Report Consultation Feedback Extract' for the excerpt from Fortis BC Inc.'s PC Assessment report consultation feedback.

Standard	Suitability Issues	One-time Cost (\$)	Ongoing Cost (\$/Year)	Recommended Effective Date
IRO-010-3	None reported.	BC Hydro Reliability Coordinator – R3: \$1,000; Procedural changes required. Northwood Pulp Mill – R3: \$0; Already in compliance – Canfor – Northwood Pulp Mill and Transmission Planner “BC Hydro” have authorized ‘Local Operating Order’ which covers this IRO-010-3 requirement ¹³ .	None reported.	BC Hydro’s Consolidated Recommendation: First day of the first calendar quarter that is three months after BCUC adoption. ¹⁵ Feedback Exceptions: Cape Scott Wind LP – Twelve months from the date of adoption by the BCUC ¹⁵ Fortis BC Inc. – Recommended effective date immediately after BCUC approval. Innergex – Immediately after adoption by the BCUC. WESCUP – Immediately after adoption by the BCUC.
MOD-031-3	None reported. ⁹	Northwood Pulp Mill – R2, R4: \$0; Already in compliance – Canfor – Northwood Pulp Mill and Transmission Planner “BC Hydro” have authorized ‘Local Operating Order’ which covers this MOD-031-3 R2, R4 requirement ¹³ Fortis BC Inc. – See PC Feedback Spreadsheet for comments. ¹⁴	None reported.	First day of the first calendar quarter that is three months after BCUC adoption. ⁹ Feedback Exceptions: Fortis BC Inc. – See PC Feedback Spreadsheet for comments. PC Assessment Report feedback: <i>Recommended effective date immediately after BCUC approval.</i> ¹⁴

¹⁵ BC Hydro does not agree with the 12 months implementation time recommended by Cape Scott Wind LP. The requirements under IRO-010-3 are materially unchanged in relation to the preceding reliability standard effective in B.C. (IRO-010-2) and actually remove the requirement to identify Load Serving Entities pursuant to Requirement 3 from scope

Standard	Suitability Issues	One-time Cost (\$)	Ongoing Cost (\$/Year)	Recommended Effective Date
NUC-001-4	None reported. ⁹	None reported.	None reported.	BC Hydro's Consolidated Recommendation: Immediately after BCUC adoption. ⁹
PRC-024-3	None reported. ⁹	<p>BC Hydro – R3, R4: \$0; Some minor reporting changes for implementation of PC functions for BC Hydro GO.</p> <p>Fortis BC Inc. – R1, R2: \$0; Minimal changes to FortisBC documentation. R3, R4: Refer to the PC Assessment Report for commentaries.</p> <p>Innergex – \$0; Innergex entities will review standard operating procedures and update to reflect wording changes of the requirement. Current generator frequency and voltage protective relay studies will be reviewed (internal process).</p> <p>WESCUP – R1-R4: \$5,000 - \$10,000; Need to review asset settings, update documentation and implement training.</p>	<p>BC Hydro – R3, R4: \$0; Refer to the PC Assessment Report for commentaries.</p> <p>Fortis BC Inc.– R1, R2: \$0 R3, R4: Refer to the PC Assessment Report for commentaries.</p>	<p>BC Hydro's Consolidated Recommendation: First day of the first calendar quarter that is 24 months after BCUC adoption.⁹</p> <p>Feedback Exceptions: BC Hydro – The later of either the first day of the first calendar quarter, three months after BCUC adoption OR October 1, 2022 to align with the U.S. effective date.</p> <p>Fortis BC Inc. – Recommended effective date immediately after BCUC approval.</p> <p>Innergex – R1, R2: Twenty-four months after the effective date of BCUC's order approving the standard. R3, R4: Effective date compliance depends on what BC Hydro as PC will require from our entities.¹⁶</p> <p>WESCUP – Six months to a year after adoption by BCUC.</p>

¹⁶ BC Hydro notes that Requirements 3 and 4 of PRC-024-3 are unchanged from the currently adopted and effective PRC-024-2 reliability standard. These requirements do not call for any action by the PC function. Please see section [2.1.4](#) for details.

Standard	Suitability Issues	One-time Cost (\$)	Ongoing Cost (\$/Year)	Recommended Effective Date
TOP-003-4	None reported.	None reported.	None reported.	BC Hydro's Consolidated Recommendation: First day of the first calendar quarter that is three months after BCUC adoption. Feedback Exceptions: Fortis BC Inc. – Recommended effective date immediately after BCUC approval. WESCUP – Immediately after adoption by the BCUC.

1

1 BC Hydro's assessment is that all eight of the Revised Standards should be
2 recommended to the BCUC for adoption in B.C. as they will either maintain or
3 enhance the reliability of the BES in B.C.

4 The total cumulative cost required to adopt the recommended eight Revised
5 Standards in B.C. is estimated to be a minimum of \$728,000 for their
6 implementation, with ongoing annual costs of a minimum of \$ 55,000 to maintain
7 compliance. The cost estimates are the cumulative costs provided by the
8 stakeholders that responded to the survey, including BC Hydro.

- 9 • BC Hydro reported estimated incremental one-time costs of at least \$603,000.
10 Annual ongoing costs are estimated to be at least \$30,000;¹⁷
- 11 • FortisBC Inc. reported estimated incremental one-time costs of at least \$20,000
12 and did not report any estimated annual ongoing costs are;
- 13 • WESCUP reported estimated incremental one-time costs of at least \$105,000.
14 Annual ongoing costs are estimated to be at least \$25,000; and
- 15 • Cape Scott Wind LP, Northwood Pulp Mill, and Innergex companies (Toba
16 Montrose General Partnership, Jimmie Creek Limited Partnership, Dokie
17 General Partnership and Upper Lillooet River Power) did not report any
18 estimated incremental one-time costs or annual ongoing costs.

19 BC Hydro's final assessment as to the Application of the Revised Standards is to
20 recommend that section A.4 Applicability in the Revised Standards be adopted by
21 the BCUC.

¹⁷ Includes one-time and annual ongoing costs related to Reliability Coordinator function.

6 NERC Glossary of Terms

The Revised Standards assessed by BC Hydro in the Report are based on the defined terms contained in the NERC Glossary dated October 8, 2020, which is attached as Appendix B.

The NERC Glossary contains no new, revised or retired terms related to reliability standards adopted in B.C. or the Revised Standards. However, the NERC Glossary is integral to the reliability standards and should be adopted by the BCUC in conjunction with the Revised Standards to achieve and maintain consistency with NERC reliability standards.

7 Conclusions

BC Hydro has assessed eight Revised Standards adopted by FERC during the 2020 Assessment Period in this Report.

BC Hydro has concluded that the eight Revised Standards assessed in the Report will preserve or enhance the reliability of the BES in B.C., and thus will serve the public interest and are suitable for adoption in B.C. BC Hydro recommends that these eight Revised Standards be adopted by the BCUC and they should have effective dates that are based on the recommended effective dates included in [Table 3](#) and Attachment A to Appendix D.

BC Hydro will be assessing the PC Revised Standards – the MOD-033-2, PRC-006-4, TPL-001-5.1, and TPL-007-4 reliability standards – in the PC Assessment Report. As discussed in section [2.1](#), BC Hydro respectfully requests that the BCUC grant a further extension as it applies to the assessment of the PC Revised Standards to May 31, 2021, given that the PC Revised Standards were adopted by FERC within the 2020 Assessment Period.

1 Regarding the replacement of seven¹⁸ BCUC approved reliability standards being
2 superseded by the Revised Standards assessed in this Report, BC Hydro
3 recommends that, to avoid duplication, these currently approved reliability standards
4 be ordered to remain in effect until the effective date of the superseding Revised
5 Standard.

¹⁸ Refer to Appendix A-1 for a list of BCUC approved reliability standards that would be superseded by reliability standards assessed in the Report.

**Mandatory Reliability Standards
Assessment Report No. 14**

Appendix A-1

**List of Assessed Reliability Standards
and NERC Glossary Terms**

Table 1 Reliability Standards Assessed

	Standard	Standard Name	FERC Order Approving Standard and Date of Order	Effective Date of FERC Order	U.S. Enforcement Date of Standard	Type	BCUC Approved Standard(s) Being Superseded
1	BAL-003-2	Frequency Response and Frequency Bias Setting	Docket No. RD20-9-000 Issued July 15, 2020	2020-07-15	2020-12-01	Revised	BAL-003-1.1
2	CIP-012-1	Cyber Security – Communications between Control Centers	Docket No. RM18-20-000 Published February 7, 2020	2020-04-07	2022-07-01	New	N/A
3	FAC-002-3	Facility Interconnection Studies	Docket No. RD20-4-000 Issued October 30, 2020	2020-10-30	2021-04-01	Revised	FAC-002-2
4	IRO-010-3	Reliability Coordinator Data Specification and Collection	Docket No. RD20-4-000 Issued October 30, 2020	2020-10-30	2021-04-01	Revised	IRO-010-2
5	MOD-031-3	Demand and Energy Data	Docket No. RD20-4-000 Issued October 30, 2020	2020-10-30	2021-04-01	Revised	MOD-031-2
6	NUC-001-4	Nuclear Plant Interface Coordination	Docket No. RD20-4-000 Issued October 30, 2020	2020-10-30	2021-04-01	Revised	NUC-001-3
7	PRC-024-3	Frequency and Voltage Protection Settings for Generating Resources	Docket No. RD20-7-000 Issued July 9, 2020	2020-07-09	2022-10-01	Revised	PRC-024-2
8	TOP-003-4	Operational Reliability Data	Docket No. RD20-4-000 Issued October 30, 2020	2020-10-30	2021-04-01	Revised	TOP-003-3

**Mandatory Reliability Standards
Assessment Report No. 14**

Appendix A-2

Reliability Standards Assessed by BC Hydro

Clean

A. Introduction

1. **Title: Frequency Response and Frequency Bias Setting**
2. **Number: BAL-003-2**
3. **Purpose:** To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1. **Balancing Authority**
 - 4.1.1.1. Balancing Authority is the responsible entity unless the Balancing Authority is a member of a Frequency Response Sharing Group, in which case, the Frequency Response Sharing Group becomes the responsible entity.
 - 4.1.2. **Frequency Response Sharing Group**
5. ~~**Effective Date:** See Implementation Plan for BAL-003-2.~~

B. Requirements and Measures

- R1.** Each Frequency Response Sharing Group (FRSG) or Balancing Authority that is not a member of a FRSG shall achieve an annual Frequency Response Measure (FRM) (as calculated and reported in accordance with Attachment A) that is equal to or more negative than its Frequency Response Obligation (FRO) to ensure that sufficient Frequency Response is provided by each FRSG or BA that is not a member of a FRSG to maintain Interconnection Frequency Response equal to or more negative than the Interconnection Frequency Response Obligation. [*Risk Factor: High*][*Time Horizon: Real-time Operations*]
- M1.** Each Frequency Response Sharing Group or Balancing Authority that is not a member of a Frequency Response Sharing Group shall have evidence such as dated data plus documented formula in either hardcopy or electronic format that it achieved an annual FRM (in accordance with the methods specified by the ERO in Attachment A with data from FRS Form 1 reported to the ERO as specified in Attachment A) that is equal to or more negative than its FRO to demonstrate compliance with Requirement R1.
- R2.** Each Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting shall implement the Frequency Bias Setting determined in

BAL-003-2 – Frequency Response and Frequency Bias Setting

accordance with Attachment A, as validated by the ERO, into its Area Control Error (ACE) calculation during the implementation period specified by the ERO and shall use this Frequency Bias Setting until directed to change by the ERO. *[Risk Factor: Medium][Time Horizon: Operations Planning]*

- M2.** The Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service shall have evidence such as a dated document in hard copy or electronic format showing the ERO validated Frequency Bias Setting was implemented into its ACE calculation within the implementation period specified or other evidence to demonstrate compliance with Requirement R2.
- R3.** Each Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service and is utilizing a variable Frequency Bias Setting shall maintain a Frequency Bias Setting that is: *[Risk Factor: Medium][Time Horizon: Operations Planning]*
- 3.1** Less than zero at all times, and
 - 3.2** Equal to or more negative than its Frequency Response Obligation when Frequency varies from 60 Hz by more than +/- 0.036 Hz.
- M3.** The Balancing Authority that is a member of a multiple Balancing Authority Interconnection, is not receiving Overlap Regulation Service and is utilizing variable Frequency Bias shall have evidence such as a dated report in hard copy or electronic format showing the average clock-minute average Frequency Bias Setting was less than zero and during periods when the clock-minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was equal to or more negative than its Frequency Response Obligation to demonstrate compliance with Requirement R3.
- R4.** Each Balancing Authority that is performing Overlap Regulation Service shall modify its Frequency Bias Setting in its ACE calculation, in order to represent the Frequency Bias Setting for the combined Balancing Authority Area, to be equivalent to either: *[Risk Factor: Medium][Time Horizon: Operations Planning]*
- The sum of the Frequency Bias Settings as shown on FRS Form 1 and FRS Form 2 for the participating Balancing Authorities as validated by the ERO, or
 - The Frequency Bias Setting shown on FRS Form 1 and FRS Form 2 for the entirety of the participating Balancing Authorities' Areas.
- M4.** The Balancing Authority shall have evidence such as a dated operating log, database or list in hard copy or electronic format showing that when it performed Overlap Regulation Service, it modified its Frequency Bias Setting in its ACE calculation as specified in Requirement R4 to demonstrate compliance with Requirement R4.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: “Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The Balancing Authority shall retain data or evidence to show compliance with Requirements R1, R2, R3 and R4, Measures M1, M2, M3 and M4 for the current year plus the previous three calendar years unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.
- The Frequency Response Sharing Group shall retain data or evidence to show compliance with Requirement R1 and Measure M1 for the current year plus the previous three calendar years unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.
- If a Balancing Authority or Frequency Response Sharing Group is found non-compliant, it shall keep information related to the non-compliance until found compliant or for the time period specified above, whichever is longer.
- The Compliance Enforcement Authority shall keep the last audit records and all subsequent requested and submitted records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

- For Interconnections that are also Balancing Authorities, Tie Line Bias control and flat frequency control are equivalent and either is acceptable.

BAL-003-2 – Frequency Response and Frequency Bias Setting

~~Violation Severity Levels~~

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Balancing Authority's, or Frequency Response Sharing Group's, FRM was less negative than its FRO by at most 15% or 15 MW/0.1 Hz, whichever one is the greater deviation from its FRO.	The Balancing Authority's, or Frequency Response Sharing Group's, FRM was less negative than its FRO by more than 15% but by at most 30% or 30 MW/0.1 Hz, whichever is the greater deviation from its FRO.	The Balancing Authority's, or Frequency Response Sharing Group's, FRM was less negative than its FRO by more than 30% but by at most 45% or 45 MW/0.1 Hz, whichever one is the greater deviation from its FRO.	The Balancing Authority's, or Frequency Response Sharing Group's, FRM was less negative than its FRO by more than 45% or by more than 45 MW/0.1 Hz, whichever is the greater deviation from its FRO.
R2.	The Balancing Authority in a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting failed to implement the validated Frequency Bias Setting value into its ACE calculation within the implementation period specified but did so within 5 calendar days from the implementation period specified by the ERO.	The Balancing Authority in a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting implemented the validated Frequency Bias Setting value into its ACE calculation in more than 5 calendar days but less than or equal to 15 calendar days from the implementation period specified by the ERO.	The Balancing Authority in a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting implemented the validated Frequency Bias Setting value into its ACE calculation in more than 15 calendar days but less than or equal to 25 calendar days from the implementation period specified by the ERO.	The Balancing Authority in a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting did not implement the validated Frequency Bias Setting value into its ACE calculation in more than 25 calendar days from the implementation period specified by the ERO.

BAL-003-2 – Frequency Response and Frequency Bias Setting

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3.	The Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service and uses a variable Frequency Bias Setting average Frequency Bias Setting during periods when the clock-minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was less negative than its Frequency Response Obligation by more than 1% but by at most 10%.	The Balancing Authority that is a member of a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a variable Frequency Bias Setting average Frequency Bias Setting during periods when the clock-minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was less negative than its Frequency Response Obligation by more than 10% but by at most 20%.	The Balancing Authority that is a member of a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a variable Frequency Bias Setting average Frequency Bias Setting during periods when the clock-minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was less negative than its Frequency Response Obligation by more than 20% but by at most 30%.	The Balancing Authority that is a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a variable Frequency Bias Setting average Frequency Bias Setting during periods when the clock-minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was less negative than its Frequency Response obligation by more than 30%.
R4.	The Balancing Authority incorrectly changed the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services with combined footprint setting-error less than or equal to 10% of the validated or calculated value.	The Balancing Authority incorrectly changed the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services with combined footprint setting-error more than 10% but less than or equal to 20% of the	The Balancing Authority incorrectly changed the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services with combined footprint setting-error more than 20% but less than or equal to 30% of the	The Balancing Authority incorrectly changed the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services with combined footprint setting-error more than 30% of the validated or calculated value. OR

BAL-003-2 – Frequency Response and Frequency Bias Setting

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		validated or calculated value.	validated or calculated value.	The Balancing Authority failed to change the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services.

D. Regional Variances

None.

E. Associated Documents

Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard

FRS Form 1

FRS Form 2

[Frequency Response Standard Background Document](#)

BAL-003-2 – Frequency Response and Frequency Bias Setting

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed "Proposed" from Effective Date	Errata
0	March 16, 2007	FERC Approval — Order 693	New
0a	December 19, 2007	Added Appendix 1 — Interpretation of R3 approved by BOT on October 23, 2007	Addition
0a	July 21, 2008	FERC Approval of Interpretation of R3	Addition
0b	February 12, 2008	Added Appendix 2 — Interpretation of R2, R2.2, R5, and R5.1 approved by BOT on February 12, 2008	Addition
0.1b	January 16, 2008	Section F: added "1."; changed hyphen to "en dash." Changed font style for "Appendix 1" to Arial; updated version number to "0.1b"	Errata
0.1b	October 29, 2008	BOT approved errata changes	Errata
0.1a	May 13, 2009	FERC Approved errata changes – version changed to 0.1a (Interpretation of R2, R2.2, R5, and R5.1 not yet approved)	Errata
0.1b	May 21, 2009	FERC Approved Interpretation of R2, R2.2, R5, and R5.1	Addition
1	February 7, 2013	Adopted by NERC Board of Trustees	Complete Revision under Project 2007-12
1	January 16, 2014	FERC Order issued approving BAL-003-1. (Order becomes effective for R2, R3, and R4 April 1, 2015. R1 becomes effective April 1, 2016.)	
1	May 7, 2014	NERC Board of Trustees adopted revisions to VRF and VSLs in Requirement R1.	
1	November 26, 2014	FERC issued a letter order approved VRF and VSL revisions to Requirement R1.	

BAL-003-2 – Frequency Response and Frequency Bias Setting

Version	Date	Action	Change Tracking
1.1	August 25, 2015	Added numbering to Introduction section, corrected parts numbering for R3, and adjusted font within section M4.	Errata
1.1	November 13, 2015	FERC Letter Order approved errata to BAL-003-1.1. Docket RD15-6-000	Errata
2	November 5, 2019	NERC Board of Trustees adopted BAL-003-2	New
2	July 15, 2020	FERC Letter Order approved errata to BAL-003-2. Docket RD20-9-000	

Attachment A

BAL-003-2 Frequency Response and Frequency Bias Setting Standard

Supporting Document

Interconnection Frequency Response Obligation

The ERO, in consultation with regional representatives, has established a target reliability criterion for each Interconnection called the Interconnection Frequency Response Obligation (IFRO). Preliminary values are provided below. Certain values are assessed annually according to the methodology which is detailed in the *Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard*.

Interconnection	Eastern	Western	ERCOT	HQ	Units
Max. Delta Frequency (MDF)	0.420	0.280	0.405	0.947	
Resource Loss Protection Criteria (RLPC) ¹	3,209	2,850	2,750	2,000	MW
Credit for Load Resources (CLR)			1,209		MW
Current IFRO (OY 2018)	-1,015	-858	-381	-179	MW/0.1 Hz
First-Step target IFRO ¹	-915	-1018	-380	-211	MW/0.1 Hz
Second-Step target IFRO ^{1, 2}	-815				
Final target IFRO ^{1, 2}	-787				

Table 1: Interconnection Frequency Response Obligations (base year 2017)

$$\text{IFRO} = (\text{RLPC} - \text{CLR}) / \text{Max Delta Freq} / 10$$

1. *These values are evaluated annually for changes in each Interconnection.*
2. *To reduce risk, the Eastern Interconnection IFRO will be stepped down annually from the 2017 value of -1,015 MW/0.1 Hz in -100 MW/0.1 Hz increments. If during the step down process, Interconnection Frequency Response Measure (FRM) declines by more than 10 percent, the ERO will halt the reduction in IFRO until such time that a determination can be made as to the cause of the degradation.*

Balancing Authority Frequency Response Obligation and Frequency Bias Setting

For a multiple Balancing Authority interconnection, the Interconnection FRO shown in Table 1 is allocated based on the Balancing Authority annual load and annual generation. The FRO allocation will be based on the following method:

$$FRO_{BA} = IFRO \times \frac{\text{Annual Gen}_{BA} + \text{Annual Load}_{BA}}{\text{Annual Gen}_{Int} + \text{Annual Load}_{Int}}$$

Where:

- Annual Gen_{BA} is the total annual output of generating plants within the Balancing Authority Area (BAA).
- Annual Load_{BA} is total annual Load within the BAA.
- Annual Gen_{Int} is the sum of all Annual Gen_{BA} values reported in that interconnection.
- Annual Load_{Int} is the sum of all Annual Load_{BA} values reported in that interconnection.

Balancing Authorities that elect to form a FRSG will calculate a FRSG FRO by adding together the individual BA FRO's.

Balancing Authorities that elect to form a FRSG as a means to jointly meet the FRO will calculate their FRM performance one of two ways:

- Calculate a group NI_A and measure the group response to all events in the reporting year on a single FRS Form 1, or
- Submit a joint Form 1 with the "FRSG" tab completed for the aggregate performance of the participating Balancing Authorities.

Balancing Authorities that merge or transfer load or generation are encouraged to notify the ERO of the change in footprint and corresponding changes in allocation such that the net obligation to the Interconnection remains the same and so that CPS limits can be adjusted.

Each Balancing Authority reports its previous year's FRM, Frequency Bias Setting and Frequency Bias type (fixed or variable) to the ERO each year to allow the ERO to validate the revised Frequency Bias Settings on FRS Form 1. In addition, each Balancing Authority will report its two largest potential resource losses and any applicable N-2 RAS events in the form. If the ERO posts the official list of events after the date specified in the timeline below, Balancing Authorities will be given 30 days from the date the ERO posts the official list of events to submit their FRS Form 1.

Once the ERO reviews the data submitted in FRS Form 1 and FRS Form 2 for all Balancing Authorities, the ERO will use FRS Form 1 data to post the following information for each Balancing Authority for the upcoming year:

- Frequency Bias Setting
- Frequency Response Obligation (FRO)

BAL-003-2 – Frequency Response and Frequency Bias Setting

Once the data listed above is fully posted, the ERO will announce the three-day implementation period for changing the Frequency Bias Setting if it differs from that shown in the timeline below.

A Balancing Authority using a fixed Frequency Bias Setting sets its Frequency Bias Setting to the greater of (in absolute value):

- Any number the Balancing Authority chooses between 100 percent and 125 percent of its Frequency Response Measure as calculated on FRS Form 1
- Interconnection Minimum as determined by the ERO

For purposes of calculating the minimum Frequency Bias Setting, a Balancing Authority participating in a FRSB will need to calculate its stand-alone FRM using FRS Form 1 and FRS Form 2 to determine its minimum Frequency Bias Setting.

A Balancing Authority providing Overlap Regulation will report the historic peak demand and generation of its combined Balancing Authorities' areas on FRS Form 1 as described in Requirement R4.

Frequency Response Measure

The Balancing Authority will calculate its FRM from Single Event Frequency Response Data (SEFRD), defined as: "the data from an individual event in a Balancing Authority area that is used to calculate its Frequency Response, expressed in MW/0.1Hz" as calculated on FRS Form 2 for each event shown on FRS Form 1. The events in FRS Form 1 are selected by the ERO using the *Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard*. The SEFRD for a typical Balancing Authority in an Interconnection with more than one Balancing Authority is the change in its Net Actual Interchange on its tie lines with adjacent Balancing Authorities divided by the change in Interconnection frequency. Some Balancing Authorities may choose to apply corrections to their Net Actual Interchange (NA_i) values to account for factors such as nonconforming loads. FRS Form 1 and 2 shows the types of adjustments that are allowed. Note that with the exception of the Contingent BA column, any adjustments made must be made for all events in an evaluation year.¹

The ERO will use a standardized sampling interval of approximately 16 seconds before the event, up to the time of the event for the pre-event NA_i and frequency (A values), and approximately 20 to 52 seconds after the event for the post-event NA_i (B values) in the computation of SEFRD values, dependent on the data scan rate of the Balancing Authority's Energy Management System (EMS).

All events listed on FRS Form 1 need to be included in the annual submission of FRS Forms 1 and 2. The only time a Balancing Authority should exclude an event is if its tie-line data or its Frequency data is corrupt, or its EMS was unavailable. FRS Form 2 has instructions on how to

¹ As an example, if an entity has non-conforming loads and makes an adjustment for one event, all events must show the non-conforming load, even if the non-conforming load does not impact the calculation. This ensures that the reports are not utilizing the adjustments only when they are favorable to the BA.

BAL-003-2 – Frequency Response and Frequency Bias Setting

correct the BA's data if the given event is internal to the BA or if other authorized adjustments are used.

Assuming data entry is correct, FRS Form 1 will automatically calculate the Balancing Authority's FRM for the past 12 months as the median of the SEFRD values. A Balancing Authority electing to report as an FRSG or a provider of Overlap Regulation Service will provide an FRS Form 1 for the aggregate of its participants.

To allow Balancing Authorities to plan its operations, events with a "Point C" that cause the Interconnection Frequency to be lower than that shown in Table 1 above (for example, an event in the Eastern Interconnection that causes the Interconnection Frequency to go to 59.4 Hz) or higher than an equal change in frequency going above 60 Hz may be included in the list of events for that Interconnection. However, the calculation of the Balancing Authority response to such an event will be adjusted to show a frequency change only to the Target Minimum Frequency shown in Table 1 above (in the previous example this adjustment would cause Frequency to be shown as 59.5 Hz rather than 59.4 HZ) or a high frequency amount of an equal quantity. Should such an event happen, the ERO will provide additional guidance.

Balancing Authorities that elect to form a FRSG as a means to jointly meet the FRO will calculate their FRM performance one of two ways:

- Calculate a group NI_A and measure the group response to all events in the reporting year on a single FRS Form 1, or
- Jointly submit the individual Balancing Authority's Form 1s, with a summary spreadsheet that contains the sum of each participant's individual event performance.

Timeline for Balancing Authority Frequency Response and Frequency Bias Setting Activities

Described below is the timeline for the exchange of information between the ERO and Balancing Authorities to:

- Facilitate the assignment of Balancing Authority FRO
- Calculate Balancing Authority FRM
- Determine Balancing Authority Frequency Bias Settings

BAL-003-2 – Frequency Response and Frequency Bias Setting

Target Business Date	Activity
March 1	FRS Form 1 is posted by the ERO* with all selected events for the operating year for BA usage.
April 1	BAs and FRSGs complete their frequency response forms for all four quarters, including the BAs' FBS calculations, returning the results to the ERO.
May 1	The ERO validates FBS values, computes the sum of all FBS values for each Interconnection.
May 15	The BAs not required to file FERC Form 714 receive a request to provide load and generation data as described in the <i>Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard**</i> to support FRO assignments and determining minimum FBS for the upcoming year. Data to be provided by July 15.
June 1	The BA implements any changes to their FBS.
November 1	The ERO assigns FRO values and Minimum FBS for the upcoming year to the BAs.

* If 4th quarter posting of FRS Form 1s is delayed, the ERO may adjust the other timelines in this table by a similar amount.

** Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard

A. Introduction

1. **Title:** Cyber Security – Communications between Control Centers
2. **Number:** CIP-012-1
3. **Purpose:** To protect the confidentiality and integrity of Real-time Assessment and Real-time monitoring data transmitted between Control Centers.
4. **Applicability:**
 - 4.1. **Functional Entities:** The requirements in this standard apply to the following functional entities, referred to as “Responsible Entities,” that own or operate a Control Center.
 - 4.1.1. **Balancing Authority**
 - 4.1.2. **Generator Operator**
 - 4.1.3. **Generator Owner**
 - 4.1.4. **Reliability Coordinator**
 - 4.1.5. **Transmission Operator**
 - 4.1.6. **Transmission Owner**
 - 4.2. **Exemptions:** The following are exempt from Reliability Standard CIP-012-1:
 - 4.2.1. Cyber Assets at Facilities regulated by the Canadian Nuclear Safety Commission.
 - 4.2.2. The systems, structures, and components that are regulated by the Nuclear Regulatory Commission under a cyber security plan pursuant to 10 C.F.R. Section 73.54.
 - 4.2.3. A Control Center that transmits to another Control Center Real-time Assessment or Real-time monitoring data pertaining only to the generation resource or Transmission station or substation co-located with the transmitting Control Center.
5. ~~**Effective Date:** See Implementation Plan for CIP-012-1.~~

B. Requirements and Measures

- R1. The Responsible Entity shall implement, except under CIP Exceptional Circumstances, one or more documented plan(s) to mitigate the risks posed by unauthorized disclosure and unauthorized modification of Real-time Assessment and Real-time monitoring data while being transmitted between any applicable Control Centers. The Responsible Entity is not required to include oral communications in its plan. The plan shall include: *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

- 1.1. Identification of security protection used to mitigate the risks posed by unauthorized disclosure and unauthorized modification of Real-time Assessment and Real-time monitoring data while being transmitted between Control Centers;
 - 1.2. Identification of where the Responsible Entity applied security protection for transmitting Real-time Assessment and Real-time monitoring data between Control Centers; and
 - 1.3. If the Control Centers are owned or operated by different Responsible Entities, identification of the responsibilities of each Responsible Entity for applying security protection to the transmission of Real-time Assessment and Real-time monitoring data between those Control Centers.
- M1.** Evidence may include, but is not limited to, documented plan(s) that meet the security objective of Requirement R1 and documentation demonstrating the implementation of the plan(s).

~~C. Compliance~~

~~1. Compliance Monitoring Process~~

~~1.1. Compliance Enforcement Authority: “Compliance Enforcement Authority” (CEA) means NERC, the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.~~

~~1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.~~

~~The Responsible Entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.~~

- ~~• The Responsible Entities shall keep data or evidence of each Requirement in this Reliability Standard for three calendar years.~~
- ~~• If a Responsible Entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.~~
- ~~• The CEA shall keep the last audit records and all requested and submitted subsequent audit records.~~

~~1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.~~

CIP-012-1 – Cyber Security – Communications between Control Centers

~~Violation Severity Levels~~

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	N/A	The Responsible Entity documented its plan(s) but failed to include one of the applicable Parts of the plan as specified in Requirement R1.	The Responsible Entity documented its plan(s) but failed to include two of the applicable Parts of the plan as specified in Requirement R1.	The Responsible Entity failed to document plan(s) for Requirement R1; Or The Responsible Entity failed to implement any Part of its plan(s) for Requirement R1, except under CIP Exceptional Circumstances.

D. Regional Variances

None.

E. Associated Documents

Implementation Plan.

Technical Rationale for CIP-012-1.

Implementation Guidance.

CIP-012-1 Version History

Version History

Version	Date	Action	Change Tracking
1		Respond to FERC Order No. 822	New
1	August 16, 2018	Adopted by NERC Board of Trustees	
1	January 23, 2020	FERC Order issued approving CIP-012-1. Docket No. RM18-20-000;	

A. Introduction

1. **Title:** Facility Interconnection Studies
2. **Number:** FAC-002-3
3. **Purpose:** To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 Planning Coordinator
 - 4.1.2 Transmission Planner
 - 4.1.3 Transmission Owner
 - 4.1.4 Distribution Provider
 - 4.1.5 Generator Owner
 - 4.1.6 Applicable Generator Owner
 - 4.1.6.1 Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.
5. ~~Effective Date: See Implementation Plan~~

B. Requirements and Measures

- R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
 - 1.1. The reliability impact of the new interconnection, or materially modified existing interconnection, on affected system(s);
 - 1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;
 - 1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and
 - 1.4. Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.

- M1.** Each Transmission Planner or each Planning Coordinator shall have evidence (such as study reports, including documentation of reliability issues) that it met all requirements in Requirement R1.
- R2.** Each Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M2.** Each Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R2.
- R3.** Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M3.** Each Transmission Owner and each Distribution Provider shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R3.
- R4.** Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or materially modified interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M4.** Each Transmission Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R4.
- R5.** Each applicable Generator Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M5.** Each applicable Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R5.

~~C. Compliance~~

~~1. Compliance Monitoring Process~~

~~1.1. Compliance Enforcement Authority~~

~~As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.~~

~~1.2. Evidence Retention~~

~~The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.~~

~~The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner and applicable Generator Owner shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:~~

~~The responsible entities shall retain documentation as evidence for three years.~~

~~If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.~~

~~The CEA shall keep the last audit records and all requested and submitted subsequent audit records.~~

~~1.3. Compliance Monitoring and Assessment Processes:~~

~~Compliance Audit~~

~~Self-Certification~~

~~Spot Check~~

~~Compliance Investigation~~

~~Self-Reporting~~

~~Complaint~~

~~1.4. Additional Compliance Information~~

~~None~~

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Long-term Planning	Medium	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities, but failed to study one of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) materially modifying existing interconnections of, generation, transmission, or electricity end-user Facilities.
R2	Long-term Planning	Medium	The Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities,

FAC-002-3 — Facility Interconnection Studies

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R3	Long-term Planning	Medium	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission

FAC-002-3 — Facility Interconnection Studies

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	Planner or Planning Coordinator.
R4	Long-term Planning	Medium	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or materially modified interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or materially modified interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or materially modified interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or materially modified interconnections to its Facilities.
R5	Long-term Planning	Medium	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning	The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner

FAC-002-3 — Facility Interconnection Studies

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	or Planning Coordinator regarding requested interconnections to its Facilities.

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None

Application Guidelines

Guidelines and Technical Basis

Entities should have documentation to support the technical rationale for determining whether an existing interconnection was “materially modified.” Recognizing that what constitutes a “material modification” will vary from entity to entity, the intent is for this determination to be based on engineering judgment.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	January 13, 2006	Removed duplication of “Regional Reliability Organizations(s).	Errata
1	August 5, 2010	Modified to address Order No. 693 Directives contained in paragraph 693. Adopted by the NERC Board of Trustees.	Revised
1	February 7, 2013	R2 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
1	November 21, 2013	R2 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees.	
2	November 6, 2014	FERC letter order issued approving FAC-002-2.	
3	February 6, 2020	Adopted by NERC Board of Trustees.	Revisions under Project 2017-07

A. Introduction

1. **Title:** Reliability Coordinator Data Specification and Collection
2. **Number:** IRO-010-3
3. **Purpose:** To prevent instability, uncontrolled separation, or Cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
 - 4.1. Reliability Coordinator.
 - 4.2. Balancing Authority.
 - 4.3. Generator Owner.
 - 4.4. Generator Operator.
 - 4.5. Transmission Operator.
 - 4.6. Transmission Owner.
 - 4.7. Distribution Provider.
5. ~~**Effective Date:** See Implementation Plan.~~

B. Requirements

- R1. The Reliability Coordinator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include but not be limited to: *(Violation Risk Factor: Low) (Time Horizon: Operations Planning)*
 - 1.1. A list of data and information needed by the Reliability Coordinator to support its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments including non-BES data and external network data, as deemed necessary by the Reliability Coordinator.
 - 1.2. Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability.
 - 1.3. A periodicity for providing data.
 - 1.4. The deadline by which the respondent is to provide the indicated data.
- M1. The Reliability Coordinator shall make available its dated, current, in force documented specification for data.
- R2. The Reliability Coordinator shall distribute its data specification to entities that have data required by the Reliability Coordinator's Operational Planning Analyses, Real-

time monitoring, and Real-time Assessments. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)

- M2.** The Reliability Coordinator shall make available evidence that it has distributed its data specification to entities that have data required by the Reliability Coordinator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. This evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, date and contents, or e-mail records.
- R3.** Each Reliability Coordinator, Balancing Authority, Generator Owner, Generator Operator, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications using: (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations*)
- 3.1** A mutually agreeable format
 - 3.2** A mutually agreeable process for resolving data conflicts
 - 3.3** A mutually agreeable security protocol
- M3.** The Reliability Coordinator, Balancing Authority, Generator Owner, Generator Operator, Reliability Coordinator, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall make available evidence that it satisfied the obligations of the documented specification using the specified criteria. Such evidence could include but is not limited to electronic or hard copies of data transmittals or attestations of receiving entities.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

1.2 Compliance Monitoring and Assessment Processes

As defined in the NERC Rules of Procedure, “Compliance Monitoring and Assessment Processes” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated reliability standard.

1.3. Data Retention

The Reliability Coordinator, Balancing Authority, Generator Owner, Generator Operator, Transmission Operator, Transmission Owner, and Distribution Provider shall each keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain its dated, current, in force documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments for Requirement R1, Measure M1 as well as any documents in force since the last compliance audit.

The Reliability Coordinator shall keep evidence for three calendar years that it has distributed its data specification to entities that have data required by the Reliability Coordinator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments for Requirement R2, Measure M2.

Each Reliability Coordinator, Balancing Authority, Generator Owner, Generator Operator, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification shall retain evidence for the most recent 90-calendar days that it has satisfied the obligations of the documented specifications in accordance with Requirement R3 and Measurement M3.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Additional Compliance Information

None.

~~Table of Compliance Elements~~

R#	Time Horizon	VRF	Violation Severity Levels			
			Lower	Moderate	High	Severe
R1	Operations Planning	Low	The Reliability Coordinator did not include one of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Reliability Coordinator did not include two of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Reliability Coordinator did not include three of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Reliability Coordinator did not include any of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. OR, The Reliability Coordinator did not have a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time

IRO-010-3 — Reliability Coordinator Data Specification and Collection

R#	Time Horizon	VRF	Violation Severity Levels			
			Lower	Moderate	High	Severe
						monitoring, and Real-time Assessments.
<p>For the Requirement R2 VSLs only, the intent of the SDT is to start with the Severe VSL first and then to work your way to the left until you find the situation that fits. In this manner, the VSL will not be discriminatory by size of entity. If a small entity has just one affected reliability entity to inform, the intent is that that situation would be a Severe violation.</p>						
R2	Operations Planning	Low	The Reliability Coordinator did not distribute its data specification as developed in Requirement R1 to one entity, or 5% or less of the entities, whichever is greater, that have data required by the Reliability Coordinator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Reliability Coordinator did not distribute its data specification as developed in Requirement R1 to two entities, or more than 5% and less than or equal to 10% of the reliability entities, whichever is greater, that have data required by the Reliability Coordinator's Operational Planning Analyses, and Real-time monitoring, and	The Reliability Coordinator did not distribute its data specification as developed in Requirement R1 to three entities, or more than 10% and less than or equal to 15% of the reliability entities, whichever is greater, that have data required by the Reliability Coordinator's Operational Planning Analyses, Real-time	The Reliability Coordinator did not distribute its data specification as developed in Requirement R1 to four or more entities, or more than 15% of the entities, whichever is greater, that have data required by the Reliability Coordinator's Operational Planning Analyses, Real-time monitoring, and

IRO-010-3 — Reliability Coordinator Data Specification and Collection

R#	Time Horizon	VRF	Violation Severity Levels			
			Lower	Moderate	High	Severe
				Real-time Assessments.	monitoring, and Real-time Assessments.	Real-time Assessments.
R3	Operations Planning, Same-Day Operations, Real-time Operations	Medium	The responsible entity receiving a data specification in Requirement R2 satisfied the obligations of the documented specifications for data but failed to follow one of the criteria shown in Parts 3.1 – 3.3.	The responsible entity receiving a data specification in Requirement R2 satisfied the obligations of the documented specifications for data but failed to follow two of the criteria shown in Parts 3.1 – 3.3.	The responsible entity receiving a data specification in Requirement R2 satisfied the obligations of the documented specifications for data but failed to follow any of the criteria shown in Parts 3.1 – 3.3.	The responsible entity receiving a data specification in Requirement R2 did not satisfy the obligations of the documented specifications for data.

IRO-010-3 — Reliability Coordinator Data Specification and Collection**D. Regional Variances**

None

E. Interpretations

None

F. Associated Documents

None

Version History

Version	Date	Action	Change Tracking
1	October 17, 2008	Adopted by Board of Trustees	New
1a	August 5, 2009	Added Appendix 1: Interpretation of R1.2 and R3 as approved by Board of Trustees	Addition
1a	March 17, 2011	Order issued by FERC approving IRO-010-1a (approval effective 5/23/11)	
1a	November 19, 2013	Updated VRFs based on June 24, 2013 approval	
2	April 2014	Revisions pursuant to Project 2014-03	
2	November 13, 2014	Adopted by NERC Board of Trustees	Revisions under Project 2014-03
2	November 19, 2015	FERC approved IRO-010-2. Docket No. RM15-16-000	
3	February 6, 2020	Adopted by NERC Board of Trustees	Revisions under Project 2017-07

Guidelines and Technical Basis

Rationale:

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT adoption, the text from the rationale text boxes was moved to this section.

Rationale for Definitions:

Changes made to the proposed definitions were made in order to respond to issues raised in NOPR paragraphs 55, 73, and 74 dealing with analysis of SOLs in all time horizons, questions on Protection Systems and Special Protection Systems in NOPR paragraph 78, and recommendations on phase angles from the SW Outage Report (recommendation 27). The intent of such changes is to ensure that Real-time Assessments contain sufficient details to result in an appropriate level of situational awareness. Some examples include: 1) analyzing phase angles which may result in the implementation of an Operating Plan to adjust generation or curtail transactions so that a Transmission facility may be returned to service, or 2) evaluating the impact of a modified Contingency resulting from the status change of a Special Protection Scheme from enabled/in-service to disabled/out-of-service.

Rationale for Applicability Changes:

Changes were made to applicability based on IRO FYRT recommendation to address the need for UVLS and UFLS information in the data specification.

The Interchange Authority was removed because activities in the Coordinate Interchange standards are performed by software systems and not a responsible entity. The software, not a functional entity, performs the task of accepting and disseminating interchange data between entities. The Balancing Authority is the responsible functional entity for these tasks.

The Planning Coordinator and Transmission Planner were removed from Draft 2 as those entities would not be involved in a data specification concept as outlined in this standard.

Rationale:

Proposed Requirement R1, Part 1.1:

Is in response to issues raised in NOPR paragraph 67 on the need for obtaining non-BES and external network data necessary for the Reliability Coordinator to fulfill its responsibilities.

Proposed Requirement R1, Part 1.2:

Is in response to NOPR paragraph 78 on relay data.

Proposed Requirement R3, Part 3.3:

Is in response to NOPR paragraph 92 where concerns were raised about data exchange through secured networks.

Corresponding changes have been made to proposed TOP-003-3.

A. Introduction

1. **Title:** Demand and Energy Data
2. **Number:** MOD-031-3
3. **Purpose:** To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 Planning Coordinator
 - 4.1.2 Transmission Planner
 - 4.1.3 Balancing Authority
 - 4.1.4 Resource Planner
 - 4.1.5 Distribution Provider
5. ~~Effective Date: See Implementation Plan.~~

B. Requirements and Measures

- R1. Each Planning Coordinator or Balancing Authority that identifies a need for the collection of Total Internal Demand, Net Energy for Load, and Demand Side Management data shall develop and issue a data request to the applicable entities in its area. The data request shall include: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
 - 1.1. A list of Transmission Planners, Balancing Authorities, and Distribution Providers that are required to provide the data (“Applicable Entities”).
 - 1.2. A timetable for providing the data. (A minimum of 30 calendar days must be allowed for responding to the request).
 - 1.3. A request to provide any or all of the following actual data, as necessary:
 - 1.3.1. Integrated hourly Demands in megawatts for the prior calendar year.
 - 1.3.2. Monthly and annual integrated peak hour Demands in megawatts for the prior calendar year.
 - 1.3.2.1. If the annual peak hour actual Demand varies due to weather-related conditions (e.g., temperature, humidity or wind speed), the Applicable Entity shall also provide the weather normalized annual peak hour actual Demand for the prior calendar year.

(e.g., temperature, humidity, or wind speed) and, if applicable, how the assumptions and methods for future forecasts were adjusted.

- M1.** The Planning Coordinator or Balancing Authority shall have a dated data request, either in hardcopy or electronic format, in accordance with Requirement R1.
- R2.** Each Applicable Entity identified in a data request shall provide the data requested by its Planning Coordinator or Balancing Authority in accordance with the data request issued pursuant to Requirement R1. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M2.** Each Applicable Entity shall have evidence, such as dated e-mails or dated transmittal letters that it provided the requested data in accordance with Requirement R2.
- R3.** The Planning Coordinator or the Balancing Authority shall provide the data listed under Requirement R1 Parts 1.3 through 1.5 for their area to the applicable Regional Entity within 75 calendar days of receiving a request for such data, unless otherwise agreed upon by the parties. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M3.** Each Planning Coordinator or Balancing Authority, shall have evidence, such as dated e-mails or dated transmittal letters that it provided the data requested by the applicable Regional Entity in accordance with Requirement R3.
- R4.** Any Applicable Entity shall, in response to a written request for the data included in parts 1.3-1.5 of Requirement R1 from a Planning Coordinator, Balancing Authority, Transmission Planner or Resource Planner with a demonstrated need for such data in order to conduct reliability assessments of the Bulk Electric System, provide or otherwise make available that data to the requesting entity. This requirement does not modify an entity's obligation pursuant to Requirement R2 to respond to data requests issued by its Planning Coordinator or Balancing Authority pursuant to Requirement R1. Unless otherwise agreed upon, the Applicable Entity: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- shall not be required to alter the format in which it maintains or uses the data;
 - shall provide the requested data within 45 calendar days of the written request, subject to part 4.1 of this requirement; unless providing the requested data would conflict with the Applicable Entity's confidentiality, regulatory, or security requirements
- 4.1.** If the Applicable Entity does not provide data requested because (1) the requesting entity did not demonstrate a reliability need for the data; or (2) providing the data would conflict with the Applicable Entity's confidentiality, regulatory, or security requirements, the Applicable Entity shall, within 30 calendar days of the written request, provide a written response to the requesting entity specifying the data that is not being provided and on what basis.

MOD-031-3 — Demand and Energy Data

- M4.** Each Applicable Entity identified in Requirement R4 shall have evidence such as dated e-mails or dated transmittal letters that it provided the data requested or provided a written response specifying the data that is not being provided and the basis for not providing the data in accordance with Requirement R4.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

a. Evidence Retention

The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.

The Applicable Entity shall keep data or evidence to show compliance with Requirements R1 through R4, and Measures M1 through M4, since the last audit, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If an Applicable Entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved, or for the time specified above, whichever is longer.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

b. Compliance Monitoring and Assessment Processes:

Compliance Audit

Self-Certification

Spot Checking

Compliance Investigation

Self-Reporting

Complaint

c. Additional Compliance Information

None

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Long-term Planning	Medium	N/A	N/A	N/A	The Planning Coordinator or Balancing Authority developed and issued a data request but failed to include either the entity(s) necessary to provide the data or the timetable for providing the data.
R2	Long-term Planning	Medium	The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide all of the data requested in Requirement R1 part 1.5.1 through part 1.5.5 OR The Applicable Entity, as defined in the data request developed in Requirement R1, provided the data requested in Requirement R1, but	The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide one of the requested items in Requirement R1 part 1.3.1 through part 1.3.4 OR The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide one of the requested items in Requirement R1 part	The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide two of the requested items in Requirement R1 part 1.3.1 through part 1.3.4 OR The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide two of the requested items in Requirement R1 part	The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide three or more of the requested items in Requirement R1 part 1.3.1 through part 1.3.4 OR The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide three or more of the requested items in Requirement R1 part 1.4.1 through part 1.4.5

MOD-031-3 — Demand and Energy Data

			<p>did so after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2 but prior to 6 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2.</p>	<p>1.4.1 through part 1.4.5</p> <p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, provided the data requested in Requirement R1, but did so 6 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2 but prior to 11 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2.</p>	<p>1.4.1 through part 1.4.5</p> <p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, provided the data requested in Requirement R1, but did so 11 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2 but prior to 15 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2.</p>	<p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide the data requested in the timetable provided pursuant to Requirement R1 prior to 16 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2.</p>
R3	Long-term Planning	Medium	<p>The Planning Coordinator or Balancing Authority, in response to a request by the Regional Entity, made available the data requested, but did so after 75 days</p>	<p>The Planning Coordinator or Balancing Authority, in response to a request by the Regional Entity, made available the data requested, but did so after 80 days</p>	<p>The Planning Coordinator or Balancing Authority, in response to a request by the Regional Entity, made available the data requested, but did so after 85 days</p>	<p>The Planning Coordinator or Balancing Authority, in response to a request by the Regional Entity, failed to make available the data requested prior to 91 days</p>

MOD-031-3 — Demand and Energy Data

			from the date of request but prior to 81 days from the date of the request.	from the date of request but prior to 86 days from the date of the request.	from the date of request but prior to 91 days from the date of the request.	or more from the date of the request.
R4	Long-term Planning	Medium	<p>The Applicable Entity provided or otherwise made available the data to the requesting entity but did so after 45 days from the date of request but prior to 51 days from the date of the request</p> <p>OR</p> <p>The Applicable Entity that is not providing the data requested provided a written response specifying the data that is not being provided and on what basis but did so after 30 days of the written request but prior to 36 days of the written request.</p>	<p>The Applicable Entity provided or otherwise made available the data to the requesting entity but did so after 50 days from the date of request but prior to 56 days from the date of the request</p> <p>OR</p> <p>The Applicable Entity that is not providing the data requested provided a written response specifying the data that is not being provided and on what basis but did so after 35 days of the written request but prior to 41 days of the written request.</p>	<p>The Applicable Entity provided or otherwise made available the data to the requesting entity but did so after 55 days from the date of request but prior to 61 days from the date of the request</p> <p>OR</p> <p>The Applicable Entity that is not providing the data requested provided a written response specifying the data that is not being provided and on what basis but did so after 40 days of the written request but prior to 46 days of the written request.</p>	<p>The Applicable Entity failed to provide or otherwise make available the data to the requesting entity within 60 days from the date of the request</p> <p>OR</p> <p>The Applicable Entity that is not providing the data requested failed to provide a written response specifying the data that is not being provided and on what basis within 45 days of the written request.</p>

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	May 6, 2014	Adopted by the NERC Board of Trustees	
1	February 19, 2015	FERC order approving MOD-031-1	
2	November 5, 2015	Adopted by the NERC Board of Trustees	
2	February 18, 2016	FERC order approving MOD-031-2. Docket No. RD16-1-000	
3	February 6, 2020	Adopted by the NERC Board of Trustees	Revisions under Project 2017-07

Guidelines and Technical Basis

Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

Rationale for R1:

Rationale for R1: To ensure that when Planning Coordinators (PCs) or Balancing Authorities (BAs) request data (R1), they identify the entities that must provide the data (Applicable Entity in part 1.1), the data to be provided (parts 1.3 – 1.5) and the due dates (part 1.2) for the requested data.

For Requirement R1 part 1.3.2.1, if the Demand does not vary due to weather-related conditions (e.g., temperature, humidity or wind speed), or the weather assumed in the forecast was the same as the actual weather, the weather normalized actual Demand will be the same as the actual demand reported for Requirement R1 part 1.3.2. Otherwise the annual peak hour weather normalized actual Demand will be different from the actual demand reported for Requirement R1 part 1.3.2.

Balancing Authorities are included here to reflect a practice in the WECC Region where BAs are the entity that perform this requirement in lieu of the PC.

Rationale for R2:

This requirement will ensure that entities identified in Requirement R1, as responsible for providing data, provide the data in accordance with the details described in the data request developed in accordance with Requirement R1. In no event shall the Applicable Entity be required to provide data under this requirement that is outside the scope of parts 1.3 - 1.5 of Requirement R1.

Rationale for R3:

This requirement will ensure that the Planning Coordinator or when applicable, the Balancing Authority, provides the data requested by the Regional Entity.

Rationale for R4:

This requirement will ensure that the Applicable Entity will make the data requested by the Planning Coordinator or Balancing Authority in Requirement R1 available to other applicable entities (Planning Coordinator, Balancing Authority, Transmission Planner or Resource Planner) unless providing the data would conflict with the Applicable Entity's confidentiality, regulatory, or security requirements. The sharing of documentation of the supporting methods and assumptions used to develop forecasts as well as information-sharing activities will improve the efficiency of planning practices and support the identification of needed system reinforcements.

MOD-031-3 — Demand and Energy Data

The obligation to share data under Requirement R4 does not supersede or otherwise modify any of the Applicable Entity's existing confidentiality obligations. For instance, if an entity is prohibited from providing any of the requested data pursuant to confidentiality provisions of an Open Access Transmission Tariff or a contractual arrangement, Requirement R4 does not require the Applicable Entity to provide the data to a requesting entity. Rather, under Part 4.1, the Applicable Entity must simply provide written notification to the requesting entity that it will not be providing the data and the basis for not providing the data. If the Applicable Entity is subject to confidentiality obligations that allow the Applicable Entity to share the data only if certain conditions are met, the Applicable Entity shall ensure that those conditions are met within the 45-day time period provided in Requirement R4, communicate with the requesting entity regarding an extension of the 45-day time period so as to meet all those conditions, or provide justification under Part 4.1 as to why those conditions cannot be met under the circumstances.

A. Introduction

1. **Title:** Nuclear Plant Interface Coordination
2. **Number:** NUC-001-4
3. **Purpose:** This standard requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 Nuclear Plant Generator Operators.
 - 4.2. Transmission Entities shall mean all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs). Such entities may include one or more of the following:
 - 4.2.1 Transmission Operators.
 - 4.2.2 Transmission Owners.
 - 4.2.3 Transmission Planners.
 - 4.2.4 Transmission Service Providers.
 - 4.2.5 Balancing Authorities.
 - 4.2.6 Reliability Coordinators.
 - 4.2.7 Planning Coordinators.
 - 4.2.8 Distribution Providers.
 - 4.2.9 Generator Owners.
 - 4.2.10 Generator Operators.
5. **Effective Date:** ~~See Implementation Plan.~~

B. Requirements and Measures

- R1.** The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M1.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities.
- R2.** The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements¹ that include mutually agreed to NPIRs and document how the Nuclear Plant Generator Operator and the applicable Transmission Entities shall address and implement these NPIRs. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M2.** The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the currently effective Agreement(s) which document how the Nuclear Plant Generator Operator and the applicable Transmission Entities address and implement the NPIRs available for inspection upon request of the Compliance Enforcement Authority.
- R3.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall incorporate the NPIRs into their planning analyses of the electric system and shall communicate the results of these analyses to the Nuclear Plant Generator Operator.: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M3.** Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Enforcement Authority, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The Compliance Enforcement Authority shall refer to the Agreements developed in accordance with this standard for specific requirements.
- R4.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*
- 4.1.** Incorporate the NPIRs into their operating analyses of the electric system.
- 4.2.** Operate the electric system to meet the NPIRs.

¹ Agreements may include mutually agreed upon procedures or protocols in effect between entities or between departments of a vertically integrated system.

- 4.3.** Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.
- M4.** Each Transmission Entity responsible for operating the electric system in accordance with the Agreement shall demonstrate or provide evidence of the following, upon request of the Compliance Enforcement Authority:
- The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1)
 - The electric system was operated to meet the NPIRs. (Requirement 4.2)
 - The Transmission Entity informed the Nuclear Plant Generator Operator when it became aware it lost the capability to assess the operation of the electric system affecting the NPIRs
- R5.** Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*
- M5.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nuclear power plant is being operated consistent with the NPIRs.
- R6.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities and the Nuclear Plant Generator Operator shall coordinate outages and maintenance activities which affect the NPIRs. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- M6.** The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs.
- R7.** Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall inform the applicable Transmission Entities of actual or proposed changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*
- M7.** The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Transmission Entities to meet the NPIRs.

- R8.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*
- M8.** The Transmission Entities shall each provide evidence that the entities informed the Nuclear Plant Generator Operator of changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs.
- R9.** The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2.
- Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements.
 - Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. : *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 9.1.** Retired. *[Note: Part 9.1 was retired under the Paragraph 81 project. The NUC SDT proposes to leave this Part blank to avoid renumbering Requirement parts that would impact existing agreements throughout the industry.]*
- 9.2.** Technical requirements and analysis:
- 9.2.1.** Identification of parameters, limits, configurations, and operating scenarios included in the NPIRs and, as applicable, procedures for providing any specific data not provided within the Agreement.
 - 9.2.2.** Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.
 - 9.2.3.** Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.

- 9.3. Operations and maintenance coordination**
- 9.3.1.** Designation of ownership of electrical facilities at the interface between the electric system and the nuclear plant and responsibilities for operational control coordination and maintenance of these facilities.
 - 9.3.2.** Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.
 - 9.3.3.** Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.
 - 9.3.4.** Provisions to address mitigating actions needed to avoid violating NPIRs and to address periods when responsible Transmission Entity loses the ability to assess the capability of the electric system to meet the NPIRs. These provisions shall include responsibility to notify the Nuclear Plant Generator Operator within a specified time frame.
 - 9.3.5.** Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power.
 - 9.3.6.** Coordination of physical and cyber security protection at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.
 - 9.3.7.** Coordination of the NPIRs with transmission system Remedial Action Schemes and any programs that reduce or shed load based on underfrequency or undervoltage.
- 9.4. Communications and training Administrative elements:**
- 9.4.1.** Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.
 - 9.4.2.** Provisions for coordination during an off-normal or emergency event affecting the NPIRs, including the need to provide timely information explaining the event, an estimate of when the system will be returned to a normal state, and the actual time the system is returned to normal.
 - 9.4.3.** Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.
 - 9.4.4.** Provisions for supplying information necessary to report to government agencies, as related to NPIRs.
 - 9.4.5.** Provisions for personnel training, as related to NPIRs.

M9. The Nuclear Plant Generator Operator shall have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Enforcement Authority. Each Transmission Entity shall have a copy of the Agreement(s) addressing the elements in Requirement 9 for which it is responsible available for inspection upon request of the Compliance Enforcement Authority.

~~C. Compliance~~

~~1. Compliance Monitoring Process~~

~~1.1. Compliance Enforcement Authority~~

~~Regional Entity~~

~~1.2. Compliance Monitoring and Assessment Processes:~~

~~Compliance Audits~~

~~Self-Certifications~~

~~Spot-Checking~~

~~Compliance Violation Investigations~~

~~Self-Reporting~~

~~Complaints Text~~

~~1.3. Data Retention~~

~~The Responsible Entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:~~

- ~~● For Measure 1, the Nuclear Plant Generator Operator shall keep its latest transmittals and receipts.~~
- ~~● For Measure 2, the Nuclear Plant Generator Operator and each Transmission Entity shall have its current, in-force Agreement.~~
- ~~● For Measure 3, the Transmission Entity shall have the latest planning analysis results.~~
- ~~● For Measures 4, 6 and 8, the Transmission Entity shall keep evidence for two years plus current.~~
- ~~● For Measures 5, 6 and 7, the Nuclear Plant Generator Operator shall keep evidence for two years plus current.~~

~~If a Responsible Entity is found non-compliant it shall keep information related to the noncompliance until found compliant.~~

~~The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.~~

~~1.4. Additional Compliance Information~~

~~None~~

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1		Medium	The Nuclear Plant Generator Operator provided the NPIRs to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIRs to two of the applicable entities unless there were only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIRs to more than two of applicable entities. OR For a particular nuclear power plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs
R2		Medium	N/A	N/A	N/A	The Nuclear Plant Generator Operator or the applicable Transmission Entity does not have in effect one or more agreements that include mutually agreed to NPIRs and

NUC-001-4— Nuclear Plant Interface Coordination

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
						document the implementation of the NPIRs.
R3		Medium	N/A	The responsible entity incorporated the NPIRs into its planning analyses but did not communicate the results to the Nuclear Plant Generator Operator.	N/A	The responsible entity did not incorporate the NPIRs into its planning analyses of the electric system.
R4		High	N/A	The responsible entity did not comply with Requirement R4, Part 4.3.	The responsible entity did not comply with Requirement R4, Part R4.1.	The responsible entity did not comply with Requirement R4, Part R4.2.
R5		High	N/A	N/A	N/A	The Nuclear Plant Generator Operator failed to operate per the NPIRs developed in accordance with this standard.
R6		Medium	N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate	N/A

NUC-001-4— Nuclear Plant Interface Coordination

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
				outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	one or more outages or maintenance activities in accordance the requirements of the agreements.	
R7		High	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of <u>proposed</u> changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of <u>actual</u> changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that <u>may</u> impact the ability of the electric system to meet the NPIRs.	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of <u>actual</u> changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits or capabilities that <u>directly impact</u> the ability of the electric system to meet the NPIRs.
R8		High	The applicable Transmission Entities did not inform the	N/A	The applicable Transmission Entities did not inform the	The applicable Transmission Entities did not inform the

NUC-001-4— Nuclear Plant Interface Coordination

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			Nuclear Plant Generator Operator of proposed changes to transmission system design, configuration (e.g. protective relay setpoints), operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.		Nuclear Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	Nuclear Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that directly impacts the ability of the electric system to meet the NPIRs.
R9		Medium		The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include up to 20% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to that entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include greater than 20%, but less than 40% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include 40% or more of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4

NUC-001-4— Nuclear Plant Interface Coordination

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
					applicable to the entity.	applicable to the entity.

D. Regional Variances

The design basis for Canadian (CANDU) nuclear power plants (NPPs) does not result in the same licensing requirements as U.S. NPPs. Nuclear Regulatory Commission (NRC) design criteria specifies that in addition to emergency on-site electrical power, electrical power from the electric network also be provided to permit safe shutdown. There are no equivalent Canadian Regulatory requirements for electrical power from the electric network to be provided to permit safe shutdown. Therefore the definition of Nuclear Plant Licensing Requirements (NPLR) for Canadian CANDU NPPs will be as follows:

Canadian Nuclear Plant Licensing Requirements (CNPLR) are requirements included in the design basis of the nuclear plant and are statutorily mandated for the operation of the plant; when used in this standard, NPLR shall mean nuclear power plant licensing requirements for avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

E. Interpretations

None

F. Associated Documents

None

Version History

Version	Date	Action	Change Tracking
1	May 2, 2007	Approved by Board of Trustees	New
2	August 5, 2009	Adopted by Board of Trustees	Revised. Modifications for Order 716 to Requirement R9.3.5 and footnote 1; modifications to bring compliance elements into conformance with the latest version of the ERO Rules of Procedure.
2	January 22, 2010	Approved by FERC on January 21, 2010. Added Effective Date	Update
2	February 7, 2013	R9.1, R9.1.1, R9.1.2, R9.1.3, and R9.1.4 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
2	November 21, 2013	R9.1, R9.1.1, R9.1.2, R9.1.3, and R9.1.4 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2.1	April 11, 2012	Errata approved by the Standards Committee; (Capitalized "Protection System" in accordance with Implementation Plan for Project 2007-17 approval of revised definition of "Protection System")	Errata associated with Project 2007-17
2.1	September 9, 2013	Informational filing submitted to reflect the revised	

NUC-001-4— Nuclear Plant Interface Coordination

		definition of Protection System in accordance with the Implementation Plan for the revised term.	
3	March 2014	Modifications to implement the recommendations of the five-year review of NUC-001, which was accepted by the Standards Committee on October 17, 2013.	Revision
3	August 14, 2014	Adopted by the NERC Board of Trustees	
3	November 4, 2014	FERC letter order issued approving NUC-001-3	
4	February 6, 2020	Adopted by NERC Board of Trustees	Revisions under Project 2017-07

Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

Rationale for R5:

The NUC FYRT recommended R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements.

Rationale for R7 and R8:

The NUC FYRT recommended deleting "Protection Systems" in Requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively; and adding a parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design."

Rationale for R9:

The NUC FYRT recommended that R9 be revised to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements. In addition, for clarity in Part 9.4.1, the NUC FYRT recommended that "affecting the NPIRs" be inserted following "Provisions for communications" and "applicable unique" be inserted following ""definitions of."

Rationale for R9.3.7:

The term “Special Protection Systems” (SPS) was replaced with “Remedial Action Schemes” (RAS) in order to align with other current NERC standards development work in Project 2010-05.2: Special Protection Systems. Project 2010-05.2 has proposed to replace SPS with RAS throughout all of the NERC Standards in order to move to the use of a single term. RAS and SPS have the same definition in the NERC Glossary of Terms.

A. Introduction

1. **Title:** **Frequency and Voltage Protection Settings** for Generating Resources
2. **Number:** PRC-024-3
3. **Purpose:** To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 Generator Owners that apply protection listed in Section 4.2.1.
 - 4.1.2 Transmission Owners (in the Quebec Interconnection only) that own a BES generator step-up (GSU) transformer or main power transformer (MPT)¹ and apply protection listed in Section 4.2.1.
 - 4.1.3 Planning Coordinators (in the Quebec Interconnection only)
 - 4.2. **Facilities²:**
 - 4.2.1 Frequency, voltage, and volts per hertz protection (whether provided by relaying or functions within associated control systems) that respond to electrical signals and: (i) directly trip the generating resource(s); or (ii) provide signals to the generating resource(s) to either trip or cease injecting current; and are applied to the following:
 - 4.2.1.1 BES generating resource(s).
 - 4.2.1.2 BES GSU transformer(s).
 - 4.2.1.3 High side of the generator-connected unit auxiliary transformer³ (UAT) installed on BES generating resource(s).
 - 4.2.1.4 Individual dispersed power producing resource(s) identified in the BES Definition, Inclusion I4.
 - 4.2.1.5 Elements that are designed primarily for the delivery of capacity from the individual dispersed power producing resources identified in the BES Definition, Inclusion I4, to the point where those resources aggregate to greater than 75 MVA.

¹ For the purpose of this standard, the MPT is the power transformer that steps up voltage from the collection system voltage to the nominal transmission/interconnecting system voltage for dispersed power producing resources.

² It is not required to install or activate the protections described in Facilities Section 4.2.

³ These transformers are variably referred to as station power UAT, or station service transformer(s) used to provide overall auxiliary power to the generating resource(s). This UAT is the transformer connected on the generator bus between the low side of the GSU and the generator terminal.

4.2.1.6 MPT⁴ of resource(s) identified in the BES Definition, Inclusion I4.

4.2.2 Exemptions: Protection on all auxiliary equipment within the generating Facility.

5. ~~Effective Date:~~ ~~See the Implementation Plan for PRC-024-3.~~

⁴ For the purpose of this standard, the MPT is the power transformer that steps up voltage from the collection system voltage to the nominal transmission/interconnecting system voltage for dispersed power producing resources

B. Requirements and Measures

- R1.** Each Generator Owner shall set its applicable frequency protection⁵ in accordance with PRC-024 Attachment 1 such that the applicable protection does not cause the generating resource to trip or cease injecting current within the “no trip zone” during a frequency excursion with the following exceptions: *[Violation Risk Factor: Medium]*
[Time Horizon: Long-term Planning]
- Applicable frequency protection may be set to trip or cease injecting current within a portion of the “no trip zone” for documented and communicated regulatory or equipment limitations in accordance with Requirement R3.
- M1.** Each Generator Owner shall have evidence that the applicable frequency protection has been set in accordance with Requirement R1, such as dated setting sheets, calibration sheets, calculations, or other documentation.
- R2.** Each Generator Owner shall set its applicable voltage protection⁵ in accordance with PRC-024 Attachment 2, such that the applicable protection does not cause the generating resource to trip or cease injecting current within the “no trip zone” during a voltage excursion at the high side of the GSU or MPT, subject to the following exceptions: *[Violation Risk Factor: Medium]* *[Time Horizon: Long-term Planning]*
- If the Transmission Planner allows less stringent voltage protection settings than those required to meet PRC-024 Attachment 2, then the Generator Owner may set its protection within the voltage recovery characteristics of a location-specific Transmission Planner’s study.
 - Applicable voltage protection may be set to trip or cease injecting current during a voltage excursion within a portion of the “no trip zone” for documented and communicated regulatory or equipment limitations in accordance with Requirement R3.
- M2.** Each Generator Owner shall have evidence that applicable voltage protection has been set in accordance with Requirement R2, such as dated setting sheets, voltage-time boundaries, calibration sheets, coordination plots, dynamic simulation studies, calculations, or other documentation.

⁵ Frequency, voltage, and volts per hertz protection (whether provided by relaying or functions within associated control systems) that respond to electrical signals and: (i) directly trip the generating resource(s); or (ii) provide signals to the generating resource(s) to either trip or cease injecting current.

- R3.** Each Generator Owner shall document each known regulatory or equipment limitation⁶ that prevents an applicable generating resource(s) with frequency or voltage protection from meeting the protection setting criteria in Requirements R1 or R2, including (but not limited to) study results, experience from an actual event, or manufacturer’s advice.
[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]
- 3.1.** The Generator Owner shall communicate the documented regulatory or equipment limitation, or the removal of a previously documented regulatory or equipment limitation, to its Planning Coordinator and Transmission Planner within 30 calendar days of any of the following:
- Identification of a regulatory or equipment limitation.
 - Repair of the equipment causing the limitation that removes the limitation.
 - Replacement of the equipment causing the limitation with equipment that removes the limitation.
 - Creation or adjustment of an equipment limitation caused by consumption of the cumulative turbine life-time frequency excursion allowance.
- M3.** Each Generator Owner shall have evidence that it has documented and communicated any known regulatory or equipment limitations that resulted in an exception to Requirements R1 or R2 in accordance with Requirement R3, such as a dated email or letter that contains such documentation as study results, experience from an actual event, or manufacturer’s advice.
- R4.** Each Generator Owner shall provide its applicable protection settings associated with Requirements R1 and R2 to the Planning Coordinator or Transmission Planner that models the associated generating resource(s) within 60 calendar days of receipt of a written request for the data and within 60 calendar days of any change to those previously requested settings unless directed by the requesting Planning Coordinator or Transmission Planner that the reporting of protection setting changes is not required.
[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]
- M4.** Each Generator Owner shall have evidence that it communicated applicable protection settings in accordance with Requirement R4, such as dated e-mails, correspondence or other evidence and copies of any requests it has received for that information.

⁶ Excludes limitations caused by the setting capability of the frequency, voltage, and volts per hertz protective relays for the generating resource(s). This does not exclude limitations originating in the equipment protected by the relay. This also does not exclude limitations of frequency, voltage, and volts per hertz protection embedded in control systems.

C. Compliance

1. ~~Compliance Monitoring Process~~

~~1.1. **Compliance Enforcement Authority:** “Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.~~

~~1.2. **Evidence Retention:** The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.~~

~~The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.~~

- ~~• The Generator Owner shall keep data or evidence Requirement R1 through R4; for 3 years or until the next audit, whichever is longer.~~
- ~~• If a Generator Owner is found non-compliant, the Generator Owner or Transmission Owner shall keep information related to the non-compliance until mitigation is complete and approved for the time period specified above, whichever is longer.~~

~~1.3. **Compliance Monitoring and Assessment Program:** As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.~~

PRC-024-3 —Frequency and Voltage Protection Settings for Generating Resources

~~Violation Severity Levels~~

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	N/A	N/A	N/A	The Generator Owner failed to set its applicable frequency protection so that it does not trip or cease injecting current according to Requirement R1.
R2.	N/A	N/A	N/A	The Generator Owner failed to set its applicable voltage protection so that it does not trip or cease injecting current according to Requirement R2.
R3.	The Generator Owner documented the known non-protection system equipment limitation that prevented it from meeting the criteria in Requirement R1 or R2 and communicated the documented limitation to its Planning Coordinator and Transmission Planner more than 30 calendar days but less than or equal to 60 calendar	The Generator Owner documented the known non-protection system equipment limitation that prevented it from meeting the criteria in Requirement R1 or R2 and communicated the documented limitation to its Planning Coordinator and Transmission Planner more than 60 calendar days but less than or equal	The Generator Owner documented the known non-protection system equipment limitation that prevented it from meeting the criteria in Requirement R1 or R2 and communicated the documented limitation to its Planning Coordinator and Transmission Planner more than 90 calendar	The Generator Owner failed to document any known non-protection system equipment limitation that prevented it from meeting the criteria in Requirement R1 or R2. OR The Generator Owner failed to communicate the

PRC-024-3 — Frequency and Voltage Protection Settings for Generating Resources

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	days of identifying the limitation.	to 90 calendar days of identifying the limitation.	days but less than or equal to 120 calendar days of identifying the limitation.	documented limitation to its Planning Coordinator and Transmission Planner within 120 calendar days of identifying the limitation.
R4.	The Generator Owner provided its protection settings more than 60 calendar days but less than or equal to 90 calendar days of any change to those settings. OR The Generator Owner provided protection settings more than 60 calendar days but less than or equal to 90 calendar days of a written request.	The Generator Owner provided its protection settings more than 90 calendar days but less than or equal to 120 calendar days of any change to those settings. OR The Generator Owner provided protection settings more than 90 calendar days but less than or equal to 120 calendar days of a written request.	The Generator Owner provided its protection settings more than 120 calendar days but less than or equal to 150 calendar days of any change to those settings. OR The Generator Owner provided protection settings more than 120 calendar days but less than or equal to 150 calendar days of a written request.	The Generator Owner failed to provide its protection settings within 150 calendar days of any change to those settings. OR The Generator Owner failed to provide protection settings within 150 calendar days of a written request.

D. Regional Variances

D.A. Variance for the Quebec Interconnection

This Variance extends the applicability of Requirements R1, R3, and R4 to Transmission Owners in the Quebec Interconnection that own a BES GSU or MPT and apply protection listed in Section 4.2.1, Facilities. This Variance also replaces Requirement R2 of the continent-wide standard in its entirety and adds a new requirement, Requirement D.A.5., applicable to Planning Coordinators in the Quebec Interconnection.

In Requirements R1, R3, and R4, all references to “Generator Owner” are replaced with “Generator Owner and Transmission Owner.”

This Variance replaces continent-wide Requirement R2 in its entirety with the following:

D.A.2. Each Generator Owner and Transmission Owner shall set its applicable voltage protection⁵ in accordance with PRC-024 Attachment 2a, such that the applicable protection does not cause the generating resource to trip or cease injecting current during a voltage excursion within the “no trip zone” at the high side of the GSU or MPT, subject to the following exceptions: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

- For newly designated strategic power plants, applicable protections must comply with the high voltage durations for such plants within 48 calendar months of the notification made pursuant to Requirement D.A.5. During this transition period, voltage protections must at least comply with the high voltage durations for “all power plants”.
- The generating resource(s) are permitted to be set to trip or to cease injecting current during a voltage excursion bounded by the “no trip zone” of PRC-024 Attachment 2a for documented and communicated regulatory or equipment limitations in accordance with Requirement R3.
- If the Transmission Planner allows less stringent voltage protection settings than those required to meet PRC-024 Attachment 2a, then the Generator Owner or Transmission Owner may set its protection within the voltage recovery characteristics of a location-specific Transmission Planner’s study.
- Inverter-based resources voltage protection settings may be set to cease injecting current momentarily during a voltage excursion at the high side of the MPT, bounded by the “no trip zone” of PRC-024 Attachment 2a, under the following conditions:

- After a minimum delay of 0.022 s, when the positive-sequence voltage exceeds 1.25 per unit (p.u.) Normal operation must resume once the voltage drops back below 1.25 p.u at the high side of the MPT.
- After a minimum delay of 0.022 s, when the phase-to-ground root mean square (RMS) voltages exceeds 1.4 p.u., as measured at generator terminals, on one or multiple phases. Normal operation must resume once the positive-sequence voltage drops back below the 1.25 p.u. at the high side of the MPT.

M.D.A.2. Each Generator Owner and Transmission Owner shall have evidence that applicable voltage protection has been set in accordance with Requirement R2, such as dated setting sheets, voltage-time boundaries, calibration sheets, coordination plots, dynamic simulation studies, calculations, or other documentation.

This Variance adds the following Requirement:

- D.A.5** Each Planning Coordinator shall designate, at least once every five calendar years, the strategic power plants that must comply with Attachment 2a and notify, within 30 calendar days of its designation, each Generator Owner or Transmission Owner that owns facilities⁷ in the strategic power plants. [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term planning*]
- M.D.A.5** Each Planning Coordinator shall have evidence that it designated, at least once every five calendar years, strategic power plants in accordance with Requirement D.A.5, Part 5 and shall have dated evidence that each Generator Owner or Transmission Owner has been notified in accordance with Requirement D.A.5, part 5.2. Evidence may include, but is not limited to: letters, emails, electronic files, or hard copy records demonstrating transmittal of information.

⁷ Facilities in the strategic power plants include facilities from the generator up to and including the MPT or GSU.

PRC-024-3 —Frequency and Voltage Protection Settings for Generating Resources

Violation Severity Levels

This Variance adds a VSL for D.A.5 and modifies the VSL for R2 as follows:

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
D.A.2.	N/A	N/A	N/A	<p>The Generator Owner or Transmission Owner failed to set its applicable voltage protection so that it does not trip or cease injecting current in accordance with Requirement D.A.2.</p> <p>OR</p> <p>The Generator Owner or Transmission Owner set its applicable voltage protection in accordance with Requirement D.A.2 but, for strategic power plants, failed to do so within 48 months of notification.</p>
D.A.5.	N/A	The Planning Coordinator designated strategic power plants at least once every five calendar years but notified each Generator Owner or Transmission Owner that owns	The Planning Coordinator designated strategic power plants at least once every five calendar years but notified each Generator Owner or Transmission Owner that owns	The Planning Coordinator failed to designate, at least once every five years, the strategic power plants that must comply with Attachment 2a.

PRC-024-3 —Frequency and Voltage Protection Settings for Generating Resources

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		facilities in the strategic power plants between 31 days and 45 days after its designation.	facilities in the strategic power plants between 46 days and 60 days after its designation.	OR The Planning Coordinator failed to notify, each Generator Owner or Transmission Owner that owns facilities in the strategic power plants or notified them more than 60 days after the its designation.

E. Associated Documents
Implementation Plan

Version History

Version	Date	Action	Change Tracking
1	May 9, 2013	Adopted by the NERC Board of Trustees	
1	March 20, 2014	FERC Order issued approving PRC-024-1. (Order becomes effective on 7/1/16.)	
2	February 12, 2015	Adopted by the NERC Board of Trustees	Standard revised in Project 2014-01: Applicability revised to clarify application of requirements to BES dispersed power producing resources
2	May 29, 2015	FERC Letter Order in Docket No. RD15-3-000 approving PRC-024-2	Modifications to adjust the applicability to owners of dispersed generation resources.
3	February 6, 2020	Adopted by the NERC Board of Trustees	Standard revised in Project 2018-04
3	July 9, 2020	FERC Letter Order approved PRC-024-3. Docket No. RD20-7-000	

Attachment 1

(Frequency No Trip Boundaries by Interconnection⁸)

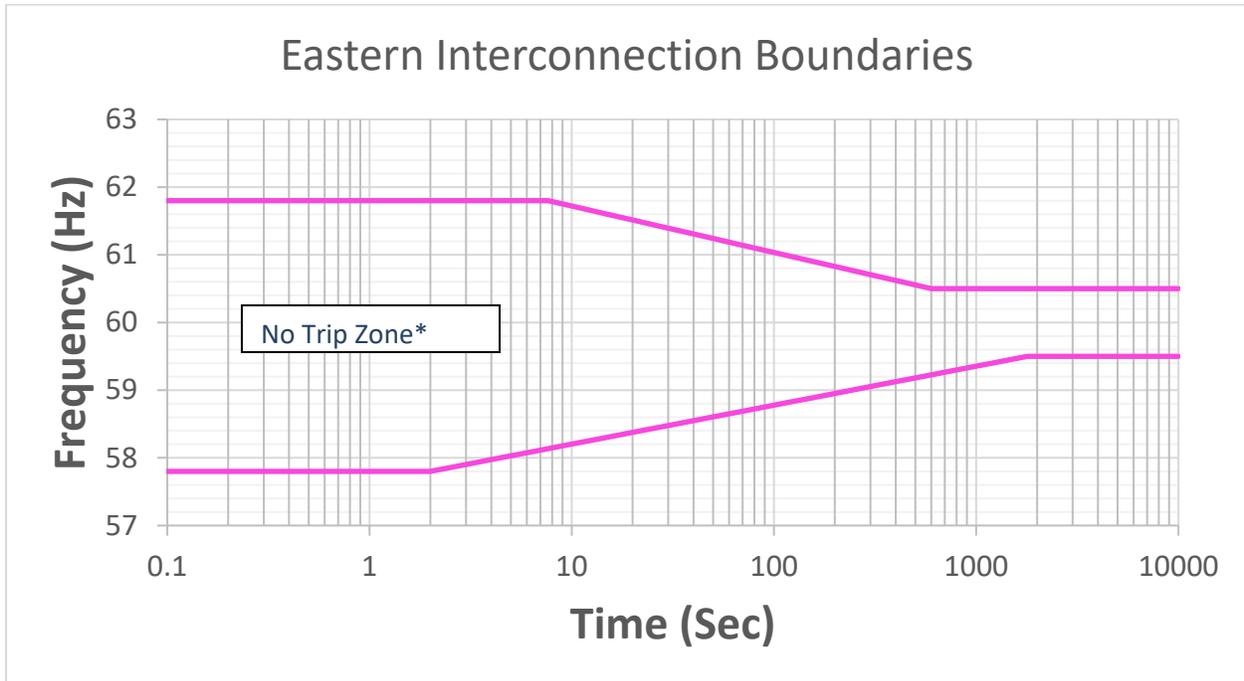


Figure 1

*** The area outside the "No Trip Zone" is not a "Must Trip Zone."**

Frequency Boundary Data Points - Eastern Interconnection

High Frequency Duration		Low Frequency Duration	
Frequency (Hz)	Minimum Time (Sec)	Frequency (Hz)	Minimum Time (sec)
≥61.8	Instantaneous ⁹	≤57.8	Instantaneous ⁹
≥60.5	$10^{(90.935-1.45713*f)}$	≤59.5	$10^{(1.7373*f-100.116)}$
<60.5	Continuous operation	> 59.5	Continuous operation

Table 1

⁸ The figures do not visually represent the “no trip zone” boundaries before 0.1 seconds and after 10,000 seconds. The Frequency Boundary Data Points Table defines the entirety of the “no trip zone” boundaries.

⁹ Frequency is calculated over a window of time. While the frequency boundaries include the option to trip instantaneously for frequencies outside the specified range, this calculation should occur over a time window. Typical window/filtering lengths are three to six cycles (50 – 100 milliseconds). Instantaneous trip settings based on instantaneously calculated frequency measurement is not permissible.

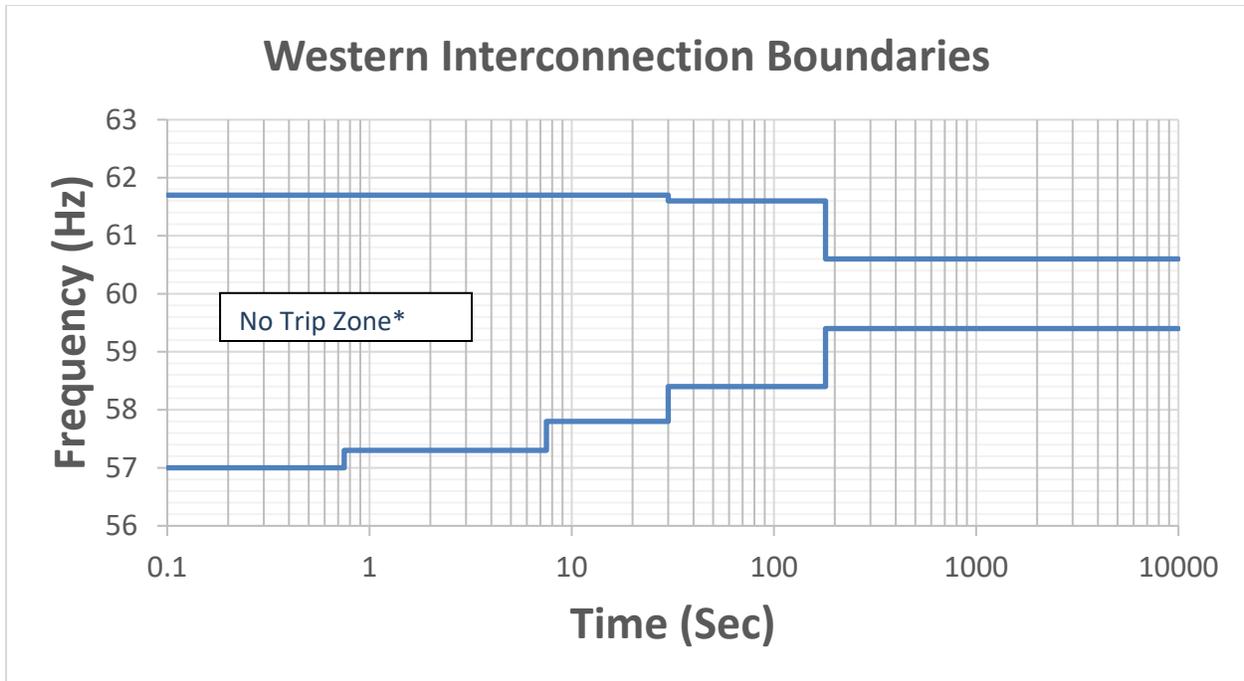


Figure 2

* The area outside the "No Trip Zone" is not a "Must Trip Zone."

Frequency Boundary Data Points —Western Interconnection

High Frequency Duration		Low Frequency Duration	
Frequency (Hz)	Minimum Time (Sec)	Frequency (Hz)	Minimum Time (sec)
≥61.7	Instantaneous ⁹	≤57.0	Instantaneous ⁹
≥61.6	30	≤57.3	0.75
≥60.6	180	≤57.8	7.5
<60.6	Continuous operation	≤58.4	30
		≤59.4	180
		>59.4	Continuous operation

Table 2

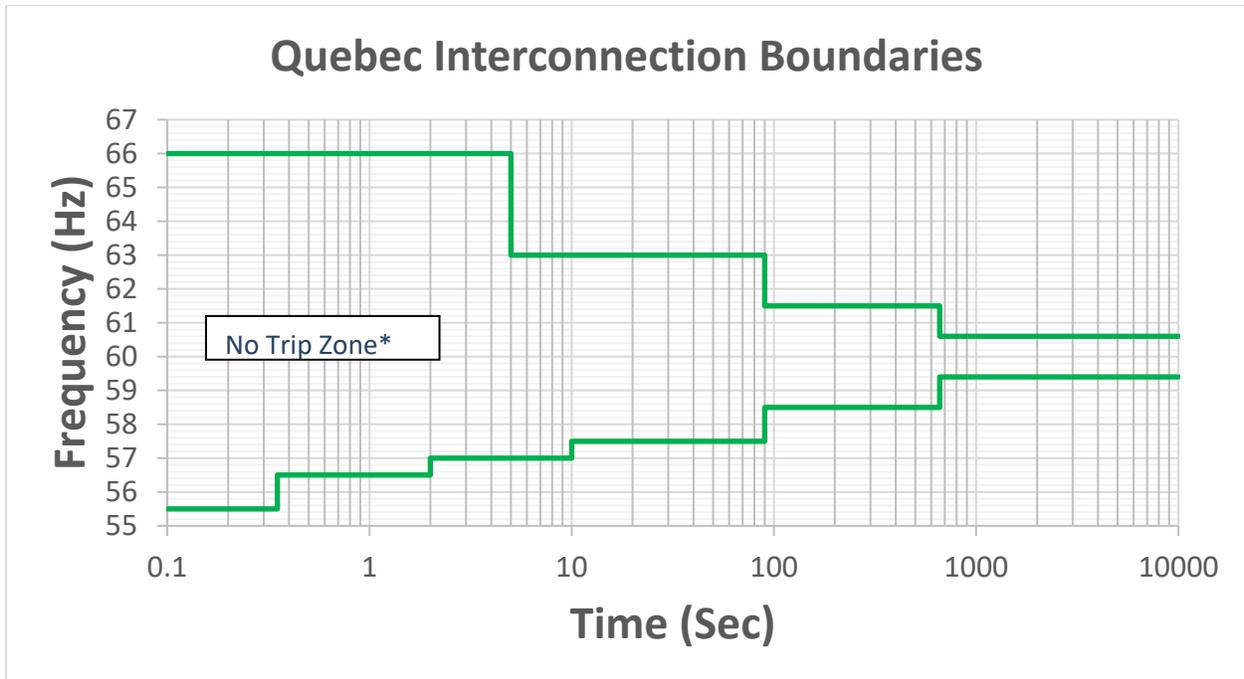


Figure 3

* The area outside the "No Trip Zone" is not a "Must Trip Zone."

Frequency Boundary Data Points – Quebec Interconnection

High Frequency Duration		Low Frequency Duration	
Frequency (Hz)	Minimum Time (Sec)	Frequency (Hz)	Minimum Time (Sec)
>66.0	Instantaneous ⁹	<55.5	Instantaneous ⁹
≥63.0	5	≤56.5	0.35
≥61.5	90	≤57.0	2
≥60.6	660	≤57.5	10
<60.6	Continuous operation	≤58.5	90
		≤59.4	660
		>59.4	Continuous operation

Table 3

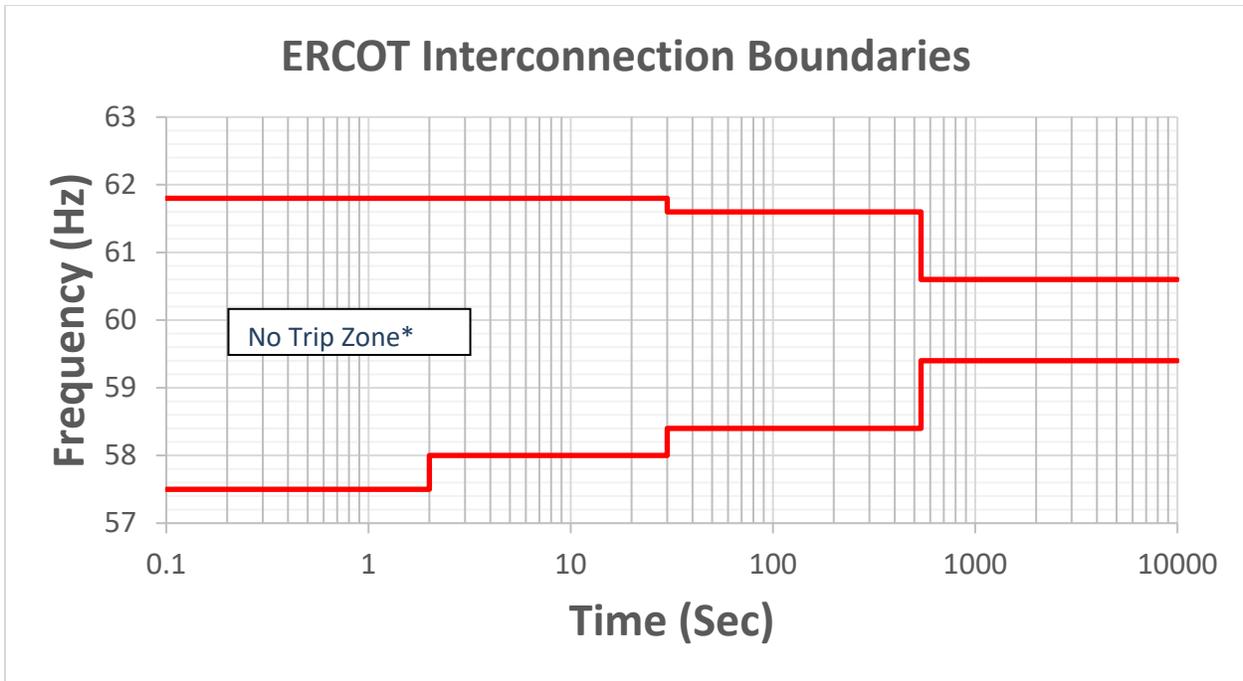


Figure 4

** The area outside the "No Trip Zone" is not a "Must Trip Zone."*

Frequency Boundary Data Points – ERCOT Interconnection

High Frequency Duration		Low Frequency Duration	
Frequency (Hz)	Minimum Time (Sec)	Frequency (Hz)	Minimum Time (sec)
≥61.8	Instantaneous ⁹	≤57.5	Instantaneous ⁹
≥61.6	30	≤58.0	2
≥60.6	540	≤58.4	30
<60.6	Continuous operation	≤59.4	540
		>59.4	Continuous operation

Table 4

PRC-024 — Attachment 2

(Voltage No-Trip Boundaries — Eastern, Western, and ERCOT Interconnections)

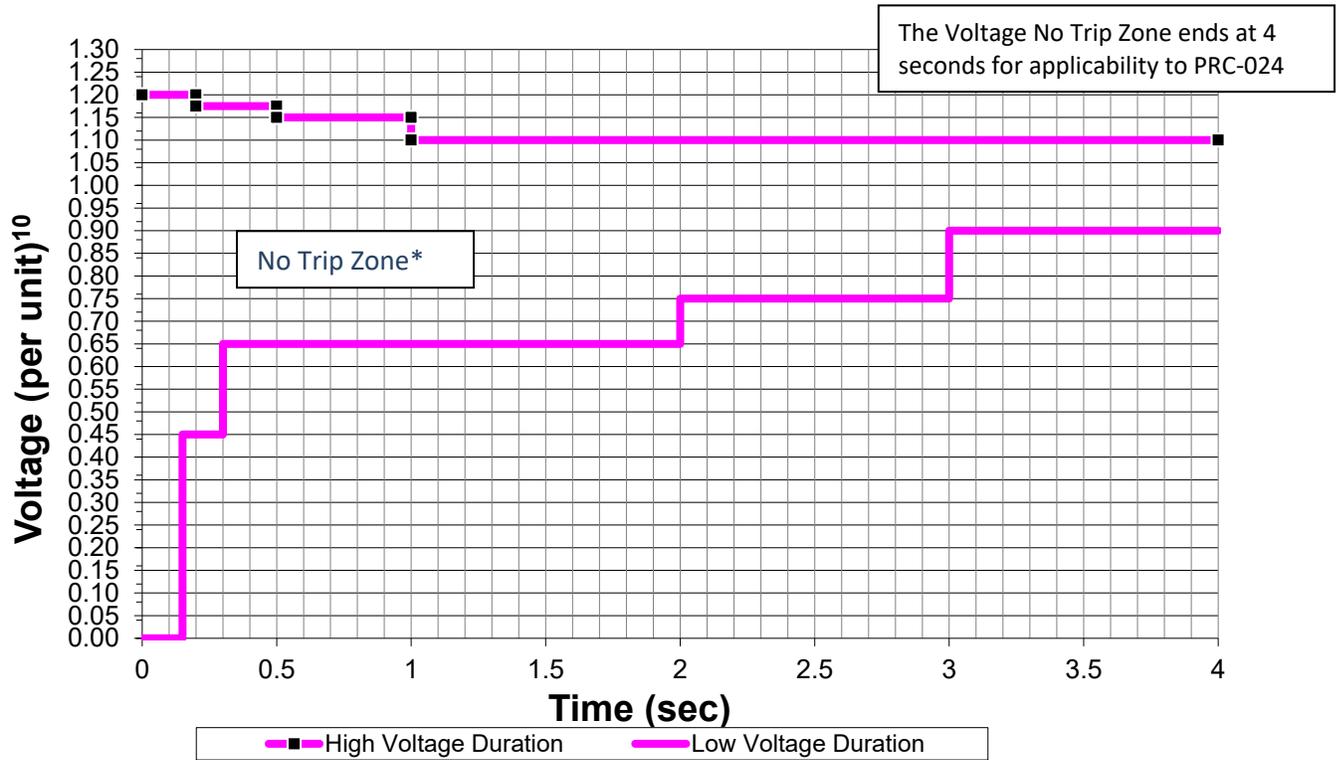


Figure 1

* The area outside the "No Trip Zone" is not a "Must Trip Zone."

Voltage Boundary Data Points

High Voltage Duration		Low Voltage Duration	
Voltage (pu)	Minimum Time (sec)	Voltage (pu)	Minimum Time (sec)
≥1.200	0.00	<0.45	0.15
≥1.175	0.20	<0.65	0.30
≥1.15	0.50	<0.75	2.00
≥1.10	1.00	<0.90	3.00
<1.10	4.00	≥ 0.90	4.00

Table 1

¹⁰Voltage at the high-side of the GSU or MPT.

Attachment 2: Voltage Boundary Clarifications — Eastern, Western, and ERCOT Interconnections

Boundary Details:

1. Unless otherwise specified by the Transmission Planner, the per unit voltage base for these boundaries is the nominal transmission system voltage (e.g., 100 kV, 115 kV, 138 kV, 161 kV, 230 kV, 345 kV, 400 kV, 500 kV, 765 kV, etc.).
2. The values in the table represent the minimum time durations allowed for specified voltage excursion thresholds.
3. When evaluating volts per hertz protection, either assume a system frequency of 60 Hertz or the magnitude of the high voltage boundary can be adjusted in proportion to deviations of frequency below 60 Hertz.
4. Voltages in the boundaries assume RMS fundamental frequency phase-to-ground or phase-to-phase per unit voltage.
5. For applicability to PRC-024, the “no trip zone” ends at 4 seconds.

Evaluating Protection Settings:

The voltage values in the Attachment 2 voltage boundaries are voltages at the high side of the GSU/MPT. For generating resources with multiple stages of step up to reach interconnecting voltage, this is the high side of the transformer with a low side below 100kV and a high side 100kV or above. When evaluating protection settings, consider the voltage differences between where the protection is measuring voltage and the high side of the GSU/MPT. A steady state calculation or dynamic simulation may be used.

If using a steady state calculation or dynamic simulation, use the following conditions when evaluating protection settings:

- a. The most probable real and reactive loading conditions for the unit under study.
- b. All installed generating plant reactive support (e.g., static VAR compensators, synchronous condensers, capacitors) equipment is available and operating normally.
- c. Account for the actual tap settings of transformers between the generator terminals and the high side of the GSU/MPT.
- d. For dynamic simulations, the automatic voltage regulator is in automatic voltage control mode with associated limiters in service.

PRC-024— Attachment 2a
(Voltage No-Trip Boundaries – Quebec Interconnection)

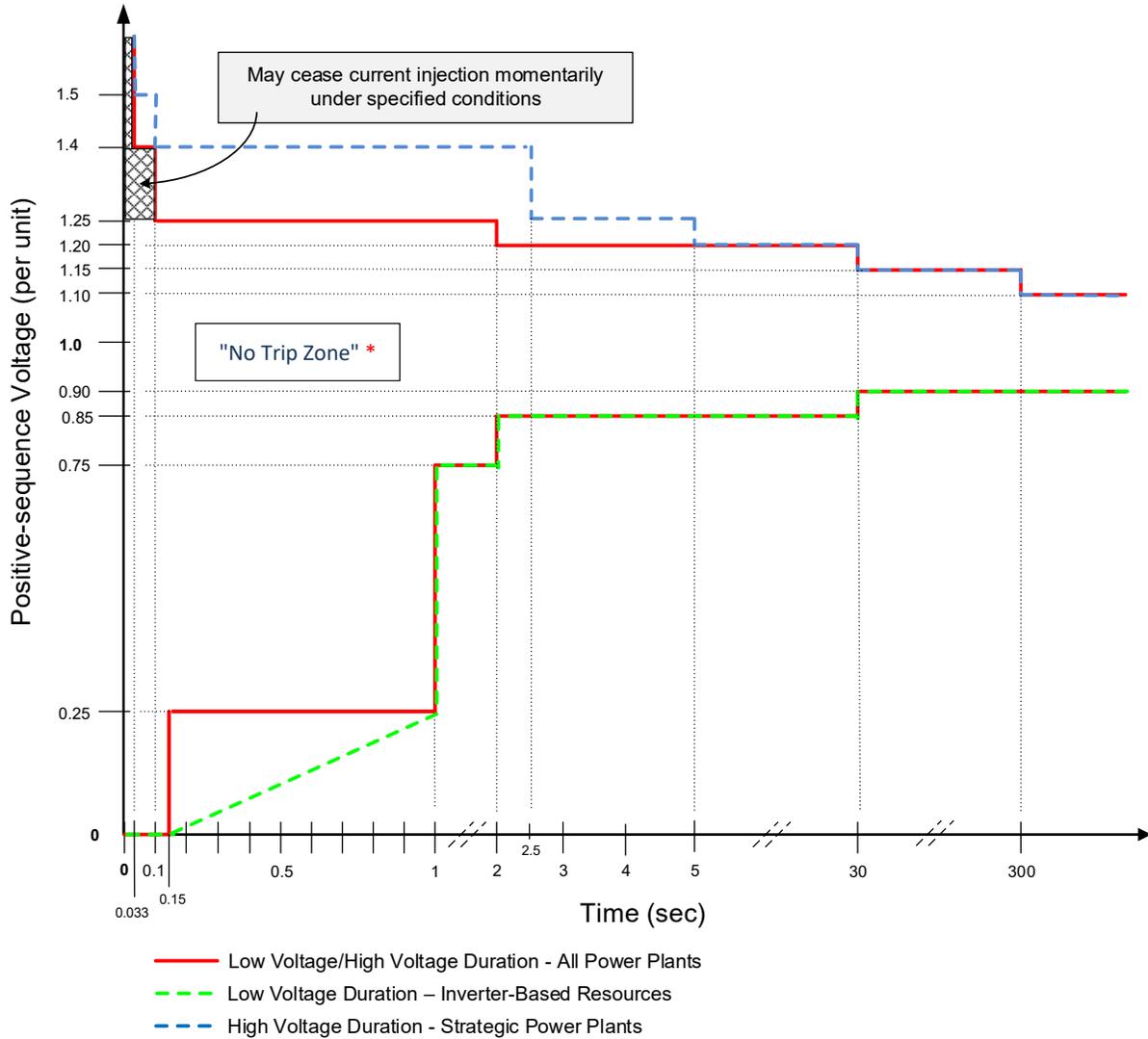


Figure 1

* The area outside the "No Trip Zone" is not a "Must Trip Zone."

PRC-024-3 — Frequency and Voltage Protection Settings for Generating Resources

Voltage Boundary Data Points – Quebec Interconnection

High Voltage Duration for all Power Plants		High Voltage Duration for strategic Power Plants	
Voltage (pu)	Minimum Time (sec)	Voltage (pu)	Minimum Time (sec)
---	---	>1.50	0.033
>1.40	0.033	>1.40	0.10
>1.25	0.10	>1.25	2.50
>1.20	2.00	>1.20	5.00
>1.15	30	>1.15	30
>1.10	300	>1.10	300
≤1.10	continuous	≤1.10	continuous

Table 1

Voltage Boundary Data Points – Quebec Interconnection

Low Voltage Duration for all Power Plants		Low Voltage Duration for Inverter-Based Resources	
Voltage (pu)	Minimum Time (sec)	Voltage (pu)	Minimum Time (sec)
<0.25	0.15	<0.25	$3.4 * V(\text{pu}) + 0.15$
<0.75	1.00	<0.75	1.00
<0.85	2.00	<0.85	2.00
<0.90	30	<0.90	30
≥0.90	continuous	≥0.90	continuous

Table 2

Attachment 2a: Voltage Boundary Clarifications — Quebec Interconnection

Boundary Details:

1. The per unit voltage base for these boundaries is the nominal operating voltage (e.g., 120 kV, 161 kV, 230 kV, 315 kV, 735 kV, etc.).
2. The values in the table represent the minimum time durations allowed for specified voltage excursion thresholds.
3. When evaluating volts per hertz protection, either assume a system frequency of 60 Hertz or the magnitude of the high voltage boundary can be adjusted in proportion to deviations of frequency below 60 Hertz.
4. Voltages in the Quebec Interconnection boundaries assume positive-sequence values.

Evaluating Protection Settings:

The voltage values in the Attachment 2a voltage boundaries are voltages at the high side of the GSU/MPT. For generating resources with multiple stages of step up to reach interconnecting voltage, this is the high side of the transformer that connects to the interconnecting voltage. When evaluating protection settings, consider the voltage differences between where the protection is measuring voltage and the high side of the GSU/MPT. A steady state calculation or dynamic simulation may be used.

If using a steady state calculation or dynamic simulation, use the following conditions when evaluating protection settings:

- a. The most probable real and reactive loading conditions for the unit under study.
- b. All installed generating plant reactive support (e.g., static VAR compensators, synchronous condensers, capacitors) equipment is available and operating normally.
- c. Account for the actual tap settings of transformers between the generator terminals and the high side of the GSU/MPT.
- d. For dynamic simulations, the automatic voltage regulator is in automatic voltage control mode with associated limiters in service.

A. Introduction

1. **Title: Operational Reliability Data**
2. **Number: TOP-003-4**
3. **Purpose:** To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.
4. **Applicability:**
 - 4.1. Transmission Operator
 - 4.2. Balancing Authority
 - 4.3. Generator Owner
 - 4.4. Generator Operator
 - 4.5. Transmission Owner
 - 4.6. Distribution Provider
5. ~~**Effective Date:** See Implementation Plan.~~

B. Requirements and Measures

- R1. Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include, but not be limited to: *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
 - 1.1. A list of data and information needed by the Transmission Operator to support its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments including non-BES data and external network data as deemed necessary by the Transmission Operator.
 - 1.2. Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability.
 - 1.3. A periodicity for providing data.
 - 1.4. The deadline by which the respondent is to provide the indicated data.
- M1. Each Transmission Operator shall make available its dated, current, in force documented specification for data.
- R2. Each Balancing Authority shall maintain a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. The data specification shall include, but not be limited to: *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*

TOP-003-4 — Operational Reliability Data

- 2.1.** A list of data and information needed by the Balancing Authority to support its analysis functions and Real-time monitoring.
 - 2.2.** Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability.
 - 2.3.** A periodicity for providing data.
 - 2.4.** The deadline by which the respondent is to provide the indicated data.
- M2.** Each Balancing Authority shall make available its dated, current, in force documented specification for data.
- R3.** Each Transmission Operator shall distribute its data specification to entities that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessment. *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
- M3.** Each Transmission Operator shall make available evidence that it has distributed its data specification to entities that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. Such evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, date and contents, or e-mail records.
- R4.** Each Balancing Authority shall distribute its data specification to entities that have data required by the Balancing Authority's analysis functions and Real-time monitoring. *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
- M4.** Each Balancing Authority shall make available evidence that it has distributed its data specification to entities that have data required by the Balancing Authority's analysis functions and Real-time monitoring. Such evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, or e-mail records.
- R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications using: *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*
 - 5.1.** A mutually agreeable format
 - 5.2.** A mutually agreeable process for resolving data conflicts
 - 5.3.** A mutually agreeable security protocol
- M5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall make available evidence that it has satisfied the obligations of the documented specifications. Such evidence could include, but is not

limited to, electronic or hard copies of data transmittals or attestations of receiving entities.

~~C. Compliance~~

~~1. Compliance Monitoring Process~~

~~1.1. Compliance Monitoring Process~~

~~As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.~~

~~1.2. Compliance Monitoring and Assessment Processes~~

~~As defined in the NERC Rules of Procedure, “Compliance Monitoring and Assessment Processes” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated reliability standard.~~

~~1.3. Data Retention~~

~~The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.~~

~~Each responsible entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:~~

~~Each Transmission Operator shall retain its dated, current, in force, documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments in accordance with Requirement R1 and Measurement M1 as well as any documents in force since the last compliance audit.~~

~~Each Balancing Authority shall retain its dated, current, in force, documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring in accordance with Requirement R2 and Measurement M2 as well as any documents in force since the last compliance audit.~~

~~Each Transmission Operator shall retain evidence for three calendar years that it has distributed its data specification to entities that have data required by the Transmission Operator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments in accordance with Requirement R3 and Measurement M3.~~

~~Each Balancing Authority shall retain evidence for three calendar years that it has distributed its data specification to entities that have data required by the Balancing Authority's analysis functions and Real-time monitoring in accordance with Requirement R4 and Measurement M4.~~

~~Each Balancing Authority, Generator Owner, Generator Operator, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall retain evidence for the most recent 90-calendar days that it has satisfied the obligations of the documented specifications in accordance with Requirement R5 and Measurement M5.~~

~~If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or the time period specified above, whichever is longer.~~

~~The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.~~

~~1.4. Additional Compliance Information~~

~~None.~~

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Operations Planning	Low	The Transmission Operator did not include one of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Transmission Operator did not include two of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Transmission Operator did not include three of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Transmission Operator did not include four of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. OR, The Transmission Operator did not have a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.

TOP-003-4 — Operational Reliability Data

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R2	Operations Planning	Low	The Balancing Authority did not include one of the parts (Part 2.1 through Part 2.4) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.	The Balancing Authority did not include two of the parts (Part 2.1 through Part 2.4) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.	The Balancing Authority did not include three of the parts (Part 2.1 through Part 2.4) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.	The Balancing Authority did not include four of the parts (Part 2.1 through Part 2.4) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. OR, The Balancing Authority did not have a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.
<p>For the Requirement R3 and R4 VSLs only, the intent of the SDT is to start with the Severe VSL first and then to work your way to the left until you find the situation that fits. In this manner, the VSL will not be discriminatory by size of entity. If a small entity has just one affected reliability entity to inform, the intent is that that situation would be a Severe violation.</p>						
R3	Operations Planning	Low	The Transmission Operator did not distribute its data	The Transmission Operator did not distribute its data	The Transmission Operator did not distribute its data	The Transmission Operator did not distribute its data

TOP-003-4 — Operational Reliability Data

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			specification to one entity, or 5% or less of the entities, whichever is greater, that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	specification to two entities, or more than 5% and less than or equal to 10% of the reliability entities, whichever is greater, that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	specification to three entities, or more than 10% and less than or equal to 15% of the reliability entities, whichever is greater, that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	specification to four or more entities, or more than 15% of the entities that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.
R4	Operations Planning	Low	The Balancing Authority did not distribute its data specification to one entity, or 5% or less of the entities, whichever is greater, that have data required by the Balancing Authority's analysis functions and Real-time monitoring.	The Balancing Authority did not distribute its data specification to two entities, or more than 5% and less than or equal to 10% of the entities, whichever is greater, that have data required by the Balancing Authority's analysis functions and Real-time monitoring.	The Balancing Authority did not distribute its data specification to three entities, or more than 10% and less than or equal to 15% of the entities, whichever is greater, that have data required by the Balancing Authority's analysis functions and Real-time monitoring.	The Balancing Authority did not distribute its data specification to four or more entities, or more than 15% of the entities that have data required by the Balancing Authority's analysis functions and Real-time monitoring.

TOP-003-4 — Operational Reliability Data

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R5	Operations Planning, Same-Day Operations, Real-time Operations	Medium	The responsible entity receiving a data specification in Requirement R3 or R4 satisfied the obligations in the data specification but did not meet one of the criteria shown in Requirement R5 (Parts 5.1 – 5.3).	The responsible entity receiving a data specification in Requirement R3 or R4 satisfied the obligations in the data specification but did not meet two of the criteria shown in Requirement R5 (Parts 5.1 – 5.3).	The responsible entity receiving a data specification in Requirement R3 or R4 satisfied the obligations in the data specification but did not meet three of the criteria shown in Requirement R5 (Parts 5.1 – 5.3).	The responsible entity receiving a data specification in Requirement R3 or R4 did not satisfy the obligations of the documented specifications for data.

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed "Proposed" from Effective Date	Errata
1		Modified R1.2 Modified M1 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised
1	October 17, 2008	Adopted by NERC Board of Trustees	
1	March 17, 2011	Order issued by FERC approving TOP-003-1 (approval effective 5/23/11)	
2	May 6, 2012	Revised under Project 2007-03	Revised
2	May 9, 2012	Adopted by Board of Trustees	Revised
3	April 2014	Changes pursuant to Project 2014-03	Revised
3	November 13, 2014	Adopted by Board of Trustees	Revisions under Project 2014-03
3	November 19, 2015	FERC approved TOP-003-3. Docket No. RM15-16-000, Order No. 817	
4	February 6, 2020	Adopted by NERC Board of Trustees	Revisions under Project 2017-07

Guidelines and Technical Basis

Rationale:

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

Rationale for Definitions:

Changes made to the proposed definitions were made in order to respond to issues raised in NOPR paragraphs 55, 73, and 74 dealing with analysis of SOLs in all time horizons, questions on Protection Systems and Special Protection Systems in NOPR paragraph 78, and recommendations on phase angles from the SW Outage Report (recommendation 27). The intent of such changes is to ensure that Real-time Assessments contain sufficient details to result in an appropriate level of situational awareness. Some examples include: 1) analyzing phase angles which may result in the implementation of an Operating Plan to adjust generation or curtail transactions so that a Transmission facility may be returned to service, or 2) evaluating the impact of a modified Contingency resulting from the status change of a Special Protection Scheme from enabled/in-service to disabled/out-of-service.

Rationale for R1:

Changes to proposed Requirement R1, Part 1.1 are in response to issues raised in NOPR paragraph 67 on the need for obtaining non-BES and external network data necessary for the Transmission Operator to fulfill its responsibilities.

Proposed Requirement R1, Part 1.2 is in response to NOPR paragraph 78 on relay data. The language has been moved from approved PRC-001-1.

Corresponding changes have been made to Requirement R2 for the Balancing Authority and to proposed IRO-010-2, Requirement R1 for the Reliability Coordinator.

Rationale for R5:

Proposed Requirement R5, Part 5.3 is in response to NOPR paragraph 92 where concerns were raised about data exchange through secured networks.

**Mandatory Reliability Standards
Assessment Report No. 14**

Appendix A-2

Reliability Standards Assessed by BC Hydro

Red-lined

A. Introduction

1. **Title: Frequency Response and Frequency Bias Setting**
2. **Number: BAL-003-~~1.12~~**
3. **Purpose:** To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.

4. **Applicability:**

- 4.1. **Functional Entities**

- 4.1.1. Balancing Authority

- 4.1.1.1. ~~The~~ Balancing Authority is the responsible entity unless the Balancing Authority is a member of a Frequency Response Sharing Group, in which case, the Frequency Response Sharing Group becomes the responsible entity.

- 4.1.2. Frequency Response Sharing Group

5. **Effective Date:** ~~See Implementation Plan for BAL-003-2.~~

- 5.1. ~~In those jurisdictions where regulatory approval is required, Requirements R2, R3 and R4 of this standard shall become effective the first calendar day of the first calendar quarter 12 months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, Requirements R2, R3 and R4 of this standard shall become effective the first calendar day of the first calendar quarter 12 months after Board of Trustees adoption.~~

- 5.2. ~~In those jurisdictions where regulatory approval is required, Requirements R1 of this standard shall become effective the first calendar day of the first calendar quarter 24 months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, Requirements R1 of this standard shall become effective the first calendar day of the first calendar quarter 24 months after Board of Trustees adoption.~~

B. Requirements

- R1. Each Frequency Response Sharing Group (FRSG) or Balancing Authority that is not a member of a FRSG shall achieve an annual Frequency Response Measure (FRM) (as calculated and reported in accordance with Attachment A) that is equal to or more negative than its Frequency Response Obligation (FRO) to ensure that sufficient Frequency Response is provided by each FRSG or BA that is not a member of a FRSG to maintain Interconnection Frequency Response equal to or more negative than the Interconnection Frequency Response Obligation. [*Risk Factor: High*][*Time Horizon: Real-time Operations*]

- R2.** Each Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting shall implement the Frequency Bias Setting determined in accordance with Attachment A, as validated by the ERO, into its Area Control Error (ACE) calculation during the implementation period specified by the ERO and shall use this Frequency Bias Setting until directed to change by the ERO. *[Risk Factor: Medium][Time Horizon: Operations Planning]*
- R3.** Each Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service and is utilizing a variable Frequency Bias Setting shall maintain a Frequency Bias Setting that is: *[Risk Factor: Medium][Time Horizon: Operations Planning]*
- 3.1** Less than zero at all times, and
- 3.2** Equal to or more negative than its Frequency Response Obligation when Frequency varies from 60 Hz by more than +/- 0.036 Hz.
- R4.** Each Balancing Authority that is performing Overlap Regulation Service shall modify its Frequency Bias Setting in its ACE calculation, in order to represent the Frequency Bias Setting for the combined Balancing Authority Area, to be equivalent to either: *[Risk Factor: Medium][Time Horizon: Operations Planning]*
- The sum of the Frequency Bias Settings as shown on FRS Form 1 and FRS Form 2 for the participating Balancing Authorities as validated by the ERO, or
 - The Frequency Bias Setting shown on FRS Form 1 and FRS Form 2 for the entirety of the participating Balancing Authorities' Areas.

Measures

- M1.** Each Frequency Response Sharing Group or Balancing Authority that is not a member of a Frequency Response Sharing Group shall have evidence such as dated data plus documented formula in either hardcopy or electronic format that it achieved an annual FRM (in accordance with the methods specified by the ERO in Attachment A with data from FRS Form 1 reported to the ERO as specified in Attachment A) that is equal to or more negative than its FRO to demonstrate compliance with Requirement R1.
- M2.** The Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service shall have evidence such as a dated document in hard copy or electronic format showing the ERO validated Frequency Bias Setting was implemented into its ACE calculation within the implementation period specified or other evidence to demonstrate compliance with Requirement R2.
- M3.** The Balancing Authority that is a member of a multiple Balancing Authority Interconnection, is not receiving Overlap Regulation Service and is utilizing variable Frequency Bias shall have evidence such as a dated report in hard copy or electronic format showing the average clock-minute average Frequency Bias Setting was less than zero and during periods when the clock-minute average frequency was outside of

the range 59.964 Hz to 60.036 Hz was equal to or more negative than its Frequency Response Obligation to demonstrate compliance with Requirement R3.

- M4.** The Balancing Authority shall have evidence such as a dated operating log, database or list in hard copy or electronic format showing that when it performed Overlap Regulation Service, it modified its Frequency Bias Setting in its ACE calculation as specified in Requirement R4 to demonstrate compliance with Requirement R4.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: “Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The Balancing Authority shall retain data or evidence to show compliance with Requirements R1, R2, R3 and R4, Measures M1, M2, M3 and M4 for the current year plus the previous three calendar years unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.
- The Frequency Response Sharing Group shall retain data or evidence to show compliance with Requirement R1 and Measure M1 for the current year plus the previous three calendar years unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.
- If a Balancing Authority or Frequency Response Sharing Group is found non-compliant, it shall keep information related to the non-compliance until found compliant or for the time period specified above, whichever is longer.
- The Compliance Enforcement Authority shall keep the last audit records and all subsequent requested and submitted records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to

~~evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.~~

- ~~• For Interconnections that are also Balancing Authorities, Tie Line Bias control and flat frequency control are equivalent and either is acceptable.~~

~~1. Compliance Monitoring Process~~

~~1.1. Compliance Enforcement Authority~~

~~The Regional Entity is the Compliance Enforcement Authority except where the responsible entity works for the Regional Entity. Where the responsible entity works for the Regional Entity, the Regional Entity will establish an agreement with the ERO or another entity approved by the ERO and FERC (i.e. another Regional Entity), to be responsible for compliance enforcement.~~

~~1.2 Compliance Monitoring and Assessment Processes:~~

~~Compliance Audits~~

~~Self-Certifications~~

~~Spot Checking~~

~~Compliance Investigation~~

~~Self-Reporting~~

~~Complaints~~

~~1.3 Data Retention~~

~~The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.~~

~~The Balancing Authority shall retain data or evidence to show compliance with Requirements R1, R2, R3 and R4, Measures M1, M2, M3 and M4 for the current year plus the previous three calendar years unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.~~

~~The Frequency Response Sharing Group shall retain data or evidence to show compliance with Requirement R1 and Measure M1 for the current year plus the previous three calendar years unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.~~

~~If a Balancing Authority or Frequency Response Sharing Group is found non-compliant, it shall keep information related to the non-compliance until found compliant or for the time period specified above, whichever is longer.~~

~~The Compliance Enforcement Authority shall keep the last audit records and all subsequent requested and submitted records.~~

~~1.4 Additional Compliance Information~~

~~For Interconnections that are also Balancing Authorities, Tie Line Bias control and flat frequency control are equivalent and either is acceptable.~~

~~BAL-003-2 – Frequency Response and Frequency Bias Setting~~
~~Standard BAL-003-1.12 – Frequency Response and Frequency Bias Setting~~

~~2.0 Violation Severity Levels~~

R#	Lower VSL	Medium-Moderate VSL	High VSL	Severe VSL
R1	The Balancing Authority's, or Frequency Response Sharing Group's, FRM was less negative than its FRO by more than 1% but by at most 30% or 15 MW/0.1 Hz, whichever one is the greater deviation from its FRO	The Balancing Authority's, or Frequency Response Sharing Group's, FRM was less negative than its FRO by more than 15% but by at most 30% or by more than 15 30 MW/0.1 Hz, whichever is the greater deviation from its FRO	The Balancing Authority's, or Frequency Response Sharing Group's, FRM was less negative than its FRO by more than 30% but by at most 45% but by at most 30% or 15 45 MW/0.1 Hz, whichever one is the greater deviation from its FRO	The Balancing Authority's, or Frequency Response Sharing Group's, FRM was less negative than its FRO by more than 30 45% or by more than 15 45 MW/0.1 Hz, whichever is the greater deviation from its FRO
R2	The Balancing Authority in a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting failed to implement the validated Frequency Bias Setting value into its ACE calculation within the implementation period specified but did so within 5 calendar days from the implementation period specified by the ERO.	The Balancing Authority in a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting implemented the validated Frequency Bias Setting value into its ACE calculation in more than 5 calendar days but less than or equal to 15 calendar days from the implementation period specified by the ERO.	The Balancing Authority in a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting implemented the validated Frequency Bias Setting value into its ACE calculation in more than 15 calendar days but less than or equal to 25 calendar days from the implementation period specified by the ERO.	The Balancing Authority in a multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting did not implement the validated Frequency Bias Setting value into its ACE calculation in more than 25 calendar days from the implementation period specified by the ERO.
R3	The Balancing Authority that is a member of a	The Balancing Authority that is a member of a	The Balancing Authority that is a member of a	The Balancing Authority that is a member of a multiple Balancing

~~BAL-003-2 – Frequency Response and Frequency Bias Setting~~
~~Standard BAL-003-1.12 – Frequency Response and Frequency Bias Setting~~

	<p>multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service and uses a variable Frequency Bias Setting average Frequency Bias Setting during periods when the clock minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was less negative than its Frequency Response Obligation by more than 1% but by at most 10%.</p>	<p>multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a variable Frequency Bias Setting average Frequency Bias Setting during periods when the clock minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was less negative than its Frequency Response Obligation by more than 10% but by at most 20%.</p>	<p>multiple Balancing Authority Interconnection and not receiving Overlap Regulation Service and uses a variable Frequency Bias Setting average Frequency Bias Setting during periods when the clock minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was less negative than its Frequency Response Obligation by more than 20% but by at most 30%.</p>	<p>Authority Interconnection and not receiving Overlap Regulation Service and uses a variable Frequency Bias Setting average Frequency Bias Setting during periods when the clock minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was less negative than its Frequency Response obligation by more than 30%.</p>
R4	<p>The Balancing Authority incorrectly changed the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services with combined footprint setting error less than or equal to 10% of the validated or calculated value.</p>	<p>The Balancing Authority incorrectly changed the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services with combined footprint setting error more than 10% but less than or equal to 20% of the validated or calculated value.</p>	<p>The Balancing Authority incorrectly changed the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services with combined footprint setting error more than 20% but less than or equal to 30% of the validated or calculated value.</p>	<p>The Balancing Authority incorrectly changed the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services with combined footprint setting error more than 30% of the validated or calculated value.</p> <p>OR</p> <p>The Balancing Authority failed to change the Frequency Bias Setting value used in its ACE calculation when providing Overlap Regulation Services.</p>

D. Regional Variance

None

E. Associated Documents

Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard

FRS Form 1

FRS Form 2

[Frequency Response Standard Background Document](#)~~[Frequency Response Standard Background Document](#)~~**F. Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed "Proposed" from Effective Date	Errata
0	March 16, 2007	FERC Approval — Order 693	New
0a	December 19, 2007	Added Appendix 1 — Interpretation of R3 approved by BOT on October 23, 2007	Addition
0a	July 21, 2008	FERC Approval of Interpretation of R3	Addition
0b	February 12, 2008	Added Appendix 2 — Interpretation of R2, R2.2, R5, and R5.1 approved by BOT on February 12, 2008	Addition
0.1b	January 16, 2008	Section F: added “1.”; changed hyphen to “en dash.” Changed font style for “Appendix 1” to Arial; updated version number to “0.1b”	Errata
0.1b	October 29, 2008	BOT approved errata changes	Errata
0.1a	May 13, 2009	FERC Approved errata changes – version changed to 0.1a (Interpretation of R2, R2.2, R5, and R5.1 not yet approved)	Errata

BAL-003-2 – Frequency Response and Frequency Bias Setting
~~Standard BAL-003-1.12 – Frequency Response and Frequency Bias Setting~~

0.1b	May 21, 2009	FERC Approved Interpretation of R2, R2.2, R5, and R5.1	Addition
1	February 7, 2013	Adopted by NERC Board of Trustees	Complete Revision under Project 2007-12
1	January 16, 2014	FERC Order issued approving BAL-003-1. (Order becomes effective for R2, R3, and R4 April 1, 2015. R1 becomes effective April 1, 2016.)	
1	May 7, 2014	NERC Board of Trustees adopted revisions to VRF and VSLs in Requirement R1.	
1	November 26, 2014	FERC issued a letter order approved VRF and VSL revisions to Requirement R1.	
1.1	August 25, 2015	Added numbering to Introduction section, corrected parts numbering for R3, and adjusted font within section M4.	Errata
1.1	November 13, 2015	FERC Letter Order approved errata to BAL-003-1.1. Docket RD15-6-000	Errata
<u>2</u>		<u>NERC Board of Trustees adopted BAL-003-2</u>	<u>New</u>

Attachment A**BAL-003-1 Frequency Response & and Frequency Bias Setting Standard
Supporting Document**

Interconnection Frequency Response Obligation (~~IFRO~~)

The ERO, in consultation with regional representatives, has established a target ~~contingency protection reliability~~ criterion for each Interconnection called the Interconnection Frequency Response Obligation (IFRO). ~~Preliminary values are provided below. Certain values are assessed annually according to the methodology which is detailed in the Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard. The default IFRO listed in Table 1 is based on the resource contingency criteria (RCC), which is the largest category C (N-2) event identified except for the Eastern Interconnection, which uses the largest event in the last 10 years. A maximum delta frequency (MDF) is calculated by adjusting a starting frequency for each Interconnection by the following:~~

- ~~• Prevailing UFLS first step~~
- ~~• CC_{Adj} , which is the adjustment for the differences between 1-second and sub-second Point C observations for frequency events. A positive value indicates that the sub-second C data is lower than the 1-second data~~
- ~~• CB_R , which is the statistically determined ratio of the Point C to Value B~~
- ~~• BC'_{Adj} , which is the statistically determined adjustment for the event nadir being below the Value B (Eastern Interconnection only) during primary frequency response withdrawal.~~

~~The IFRO for each Interconnection in Table 1 is then calculated by dividing the RCC MWs by 10 times the MDF. In the Eastern Interconnection there is an additional adjustment (BC'_{Adj}) for the event nadir being below the Value B due to primary frequency response withdrawal. This IFRO includes uncertainty adjustments at a 95 % confidence level. Detailed descriptions of the calculations used in Table 1 below are defined in the *Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard*.~~

<u>Interconnection</u>	<u>Eastern</u>	<u>Western</u>	<u>ERCOT</u>	<u>HQ</u>	<u>Units</u>
<u>Max. Delta Frequency (MDF)</u>	<u>0.420</u>	<u>0.280</u>	<u>0.405</u>	<u>0.947</u>	
<u>Resource Loss Protection Criteria (RLPC)¹</u>	<u>3,209</u>	<u>2,850</u>	<u>2,750</u>	<u>2,000</u>	<u>MW</u>
<u>Credit for Load Resources (CLR)</u>			<u>1,209</u>		<u>MW</u>
<u>Current IFRO (OY 2018)</u>	<u>-1,015</u>	<u>-858</u>	<u>-381</u>	<u>-179</u>	<u>MW/0.1 Hz</u>
<u>First-Step target IFRO¹</u>	<u>-915</u>	<u>-1018</u>	<u>-380</u>	<u>-211</u>	<u>MW/0.1 Hz</u>
<u>Second-Step target IFRO^{1, 2}</u>	<u>-815</u>				
<u>Final target IFRO^{1, 2}</u>	<u>-784</u>				

Table 1: Interconnection Frequency Response Obligations (base year 2017)

$$\text{IFRO} = (\text{RLPC} - \text{CLR}) / \text{Max Delta Freq} / 10$$

BAL-003-2 – Frequency Response and Frequency Bias Setting ~~Standard BAL-003-1.12 – Frequency Response and Frequency Bias Setting~~

1. These values are evaluated annually for changes in each Interconnection.
2. To reduce risk, the Eastern Interconnection IFRO will be stepped down annually from the 2017 value of -1,015 MW/0.1 Hz in -100 MW/0.1 Hz increments. If during the step down process, Interconnection Frequency Response Measure (FRM) declines by more than 10 percent, the ERO will halt the reduction in IFRO until such time that a determination can be made as to the cause of the degradation.

Interconnection	Eastern	Western	ERCOT	HQ	Units
Starting Frequency (F_{start})	59.974	59.976	59.963	59.972	Hz
Prevailing UFLS First Step	59.5*	59.5	59.3	58.5	Hz
Base-Delta Frequency (DF_{base})	0.474	0.476	0.663	1.472	Hz
CC_{ADJ}	0.007	0.004	0.012	N/A	Hz
Delta Frequency (DF_{CC})	0.467	0.472	0.651	1.472	Hz
CB_R	1.000	1.625	1.377	1.550	
Delta Frequency (DF_{CBR})	0.467	0.291	0.473	0.949	Hz
BC'_{ADJ}	0.018	N/A	N/A	N/A	Hz
Max. Delta Frequency (MDF)	0.449	0.291	0.473	0.949	
Resource Contingency Criteria (RCC)	4,500	2,740	2,750	1,700	MW
Credit for Load Resources (CLR)		300	1,400**		MW
IFRO	-1,002	-840	-286	-179	MW/0.1 Hz

Table 1: Interconnection Frequency Response Obligations

*The Eastern Interconnection UFLS set point listed is a compromise value set midway between the stable frequency minimum established in PRC 006-1 (59.3 Hz) and the local protection UFLS setting of 59.7 Hz used in Florida and Manitoba.

**In the Base Obligation measure for ERCOT, 1400 MW (Load Resources triggered by Under Frequency Relays at 59.70 Hz) was reduced from its Resource Contingency Criteria level of 2750 MW to get 239 MW/0.1 Hz. This was reduced to accurately account for designed response from Load Resources within 30 cycles.

An Interconnection may propose alternate IFRO protection criteria to the ERO by submitting a SAR with supporting technical documentation.

Balancing Authority Frequency Response Obligation (~~FRO~~) and Frequency Bias Setting

The ERO will manage the administrative procedure for annually assigning an FRO and implementation of the Frequency Bias Setting for each Balancing Authority. The annual timeline for all activities described in this section are shown below.

~~BAL-003-2 – Frequency Response and Frequency Bias Setting~~
~~Standard BAL-003-1.12 – Frequency Response and Frequency Bias Setting~~

For a multiple Balancing Authority interconnection, the Interconnection ~~FRO~~ ~~Frequency Response Obligation~~ shown in Table 1 is allocated based on the Balancing Authority annual load and annual generation.- The FRO allocation will be based on the following method:

$$FRO_{BA} = IFRO \times \frac{\text{Annual Gen}_{BA} + \text{Annual Load}_{BA}}{\text{Annual Gen}_{Int} + \text{Annual Load}_{Int}}$$

Where:

- Annual Gen_{BA} is the total annual ~~“Output-output of Generating-generating Plantsplants”~~ within the Balancing Authority Area (BAA), ~~on FERC Form 714, column c of Part II – Schedule 3.~~
- ~~Annual Load_{BA} is total annual Load within the BAA, on FERC Form 714, column e of Part II – Schedule 3.~~
- Annual Gen_{Int} is the sum of all Annual Gen_{BA} values reported in that interconnection.
- Annual Load_{Int} is the sum of all Annual Load_{BA} values reported in that interconnection.

~~The data used for this calculation is from the most recently filed Form 714. As an example, a report to NERC in January 2013 would use the Form 714 data filed in 2012, which utilized data from 2011.~~

~~Balancing Authorities that are not FERC jurisdictional should use the Form 714 Instructions to assemble and submit equivalent data to the ERO for use in the FRO Allocation process.~~

Balancing Authorities that elect to form a FRSG will calculate a FRSG FRO by adding together the individual BA FRO's.

Balancing Authorities that elect to form a FRSG as a means to jointly meet the FRO will calculate their FRM performance one of two ways:

- Calculate a group NI_A and measure the group response to all events in the reporting year on a single FRS Form 1, or
- ~~Jointly sSubmit a joint Form 1 with the “FRSG” tab completed for the aggregate performance of the participating Balancing Authorities~~ ~~the individual BAs’ Form 1s, with a summary spreadsheet that contains the sum of each participant’s individual event performance.~~

Balancing Authorities that merge or ~~that~~ transfer load or generation are encouraged to notify the ERO of the change in footprint and corresponding changes in allocation such that the net obligation to the Interconnection remains the same and so that CPS limits can be adjusted.

Each Balancing Authority reports its previous year's ~~Frequency Response Measure (FRM)~~, Frequency Bias Setting and Frequency Bias type (fixed or variable) to the ERO each year to allow the ERO to validate the revised Frequency Bias Settings on FRS Form 1.- In addition, each Balancing Authority will report its two largest potential resource losses and any applicable N-2 RAS events in the form. If the ERO posts the official list of events after the date specified in the timeline below, Balancing Authorities will be given 30 days from the date the ERO posts the official list of events to submit their FRS Form 1.

Once the ERO reviews the data submitted in FRS Form 1 and FRS Form 2 for all Balancing Authorities, the ERO will use FRS Form 1 data to post the following information for each Balancing Authority for the upcoming year:

- Frequency Bias Setting
- Frequency Response Obligation (FRO)

BAL-003-2 – Frequency Response and Frequency Bias Setting
~~Standard BAL-003-1.12 – Frequency Response and Frequency Bias Setting~~

Once the data listed above is fully posted, the ERO will announce the three-day implementation period for changing the Frequency Bias Setting if it differs from that shown in the timeline below.

A Balancing Authority A using a fixed Frequency Bias Setting sets its Frequency Bias Setting to the greater of (in absolute value):

- Any number the BA Balancing Authority chooses between 100% percent and 125% percent of its Frequency Response Measure as calculated on FRS Form 1
- Interconnection Minimum as determined by the ERO

For purposes of calculating the minimum Frequency Bias Setting, a Balancing Authority participating in a Frequency Response Sharing Group FRSG will need to calculate its stand-alone Frequency Response Measure FRM using FRS Form 1 and FRS Form 2 to determine its minimum Frequency Bias Setting.

A Balancing Authority providing Overlap Regulation will report the historic peak demand and generation of its combined BAs' Balancing Authorities' areas on FRS Form 1 as described in Requirement R4.

~~There are occasions when changes are needed to Bias Settings outside of the normal schedule. Examples are footprint changes between Balancing Authorities and major changes in load or generation or the formation of new Balancing Authorities. In such cases the changing Balancing Authorities will work with their Regions, NERC and the Resources Subcommittee to confirm appropriate changes to Bias Settings, FRO, CPS limits and Inadvertent Interchange balances.~~

~~If there is no net change to the Interconnection total Bias, the Balancing Authorities involved will agree on a date to implement their respective change in Bias Settings. The Balancing Authorities and ERO will also agree to the allocation of FRO such that the sum remains the same.~~

~~If there is a net change to the Interconnection total Bias, this will cause a change in CPS2 limits and FRO for other Balancing Authorities in the Interconnection. In this case, the ERO will notify the impacted Balancing Authorities of their respective changes and provide an implementation window for making the Bias Setting changes.~~

Frequency Response Measure ~~(FRM)~~

The Balancing Authority will calculate its FRM from Single Event Frequency Response Data (SEFRD), defined as: “the data from an individual event ~~from in~~ a Balancing Authority area that is used to calculate its Frequency Response, expressed in MW/0.1Hz” as calculated on FRS Form 2 for each event shown on FRS Form 1. The events in FRS Form 1 are selected by the ERO using the *Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard*. The SEFRD for a typical Balancing Authority in an Interconnection with more than one Balancing Authority is ~~basically~~ the change in its Net Actual Interchange on its tie lines with ~~its~~ adjacent Balancing Authorities divided by the change in Interconnection frequency. ~~Some~~ Balancing Authorities may choose to apply corrections to their Net Actual Interchange (NA_i) values to account for factors such as nonconforming loads. FRS Form 1 and 2 shows the types of adjustments that are allowed. Note that with the exception of the Contingent BA column, any adjustments made must be made for all events in an evaluation year. ¹ ~~As an example, if an entity has non-conforming loads and makes an adjustment for one event, all events must show the non-~~

¹ As an example, if an entity has non-conforming loads and makes an adjustment for one event, all events must show the non-conforming load, even if the non-conforming load does not impact the calculation. This ensures that the reports are not utilizing the adjustments only when they are favorable to the BA.

BAL-003-2 – Frequency Response and Frequency Bias Setting
~~Standard BAL 003 1.12 – Frequency Response and Frequency Bias Setting~~

~~conforming load, even if the non-conforming load does not impact the calculation. This ensures that the reports are not utilizing the adjustments only when they are favorable to the BA.)~~

The ERO will use a standardized sampling interval of approximately 16 seconds before the event, up to the time of the event for the pre-event NA₁, and frequency (A values), and approximately 20 to 52 seconds after the event for the post-event NA₁ (B values) in the computation of SEFRD values, dependent on the data scan rate of the Balancing Authority’s Energy Management System (EMS).

All events listed on FRS Form 1 need to be included in the annual submission of FRS Forms 1 and 2. The only time a Balancing Authority should exclude an event is if its tie-line data or its Frequency data is corrupt, or its EMS was unavailable. -FRS Form 2 has instructions on how to correct the BA’s data if the given event is internal to the BA or if other authorized adjustments are used.

Assuming data entry is correct, FRS Form 1 will automatically calculate the Balancing Authority’s FRM for the past 12 months as the median of the SEFRD values. A Balancing Authority electing to report as an FRSG or a provider of Overlap Regulation Service will provide an FRS Form 1 for the aggregate of its participants.

To allow Balancing ~~authorities~~ Authorities to plan its operations, events with a “Point C” that cause the Interconnection Frequency to be lower than that shown in Table 1 above (for example, an event in the Eastern Interconnection that causes the Interconnection Frequency to go to 59.4 Hz) or higher than an equal change in frequency going above 60 Hz may be included in the list of events for that ~~interconnection~~ Interconnection. However, the calculation of the ~~BA~~ Balancing Authority response to such an event will be adjusted to show a frequency change only to the Target Minimum Frequency shown in Table 1 above (in the previous example this adjustment would cause Frequency to be shown as 59.5 Hz rather than 59.4 HZ) or a high frequency amount of an equal quantity. Should such an event happen, the ERO will provide additional guidance.

Balancing Authorities that elect to form a FRSG as a means to jointly meet the FRO will calculate their FRM performance one of two ways:

- Calculate a group NI_A and measure the group response to all events in the reporting year on a single FRS Form 1, or
- Jointly submit the individual Balancing Authority’s Form 1s, with a summary spreadsheet that contains the sum of each participant’s individual event performance.

Timeline for Balancing Authority Frequency Response and Frequency Bias Setting Activities

Described below is the timeline for the exchange of information between the ERO and Balancing Authorities ~~(BA)~~ to:

- Facilitate the assignment of ~~BA~~ Balancing Authority Frequency Response Obligations (FRO)
- Calculate ~~BA~~ Balancing Authority Frequency Response Measures (FRM)
- Determine ~~BA~~ Balancing Authority Frequency Bias Settings (FBS)

<u>Target Business Date</u>	<u>Activity</u>
<u>March 1</u>	<u>FRS Form 1 is posted by the ERO* with all selected events for the operating year for BA usage.</u>

BAL-003-2 – Frequency Response and Frequency Bias Setting Standard BAL-003-1.12 – Frequency Response and Frequency Bias Setting

<u>April 1</u>	<u>BAs and FRSGs complete their frequency response forms for all four quarters, including the BAs' FBS calculations, returning the results to the ERO.</u>
<u>May 1</u>	<u>The ERO validates FBS values, computes the sum of all FBS values for each Interconnection.</u>
<u>May 15</u>	<u>The BAs not required to file FERC Form 714 receive a request to provide load and generation data as described in the Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard**</u> <u>to support FRO assignments and determining minimum FBS for the upcoming year. Data to be provided by July 15.</u>
<u>June 1</u>	<u>The BA implements any changes to their FBS.</u>
<u>November 1</u>	<u>The ERO assigns FRO values and Minimum FBS for the upcoming year to the BAs.</u>

* If 4th quarter posting of FRS Form 1 is delayed, the ERO may adjust the other timelines in this table by a similar amount.

** Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard

<u>Target Date</u>	<u>Activity</u>
<u>April 30</u>	<u>The ERO reviews candidate frequency events and selects frequency events for the first quarter (December to February).</u>
<u>May 10</u>	<u>Form1 is posted with selected events from the first quarter for BA usage by the ERO.</u>
<u>May 15</u>	<u>The BAs receive a request to provide load and generation data as described in Attachment A to support FRO assignments and determining minimum FBS for BAs.</u>
<u>July 15</u>	<u>The BAs provide load and generation data as described in Attachment A to the ERO.</u>
<u>July 30</u>	<u>The ERO reviews candidate frequency events and selects frequency events for the second quarter (March to May).</u>
<u>August 10</u>	<u>Form1 is posted with selected events from the first and second quarters for BA usage by the ERO.</u>
<u>October 30</u>	<u>The ERO reviews candidate frequency events and selects frequency events for the third quarter (June to August)</u>
<u>November 10</u>	<u>Form1 is posted with selected events from the first, second, and third quarters for BA usage by the ERO.</u>
<u>November 20</u>	<u>If necessary, the ERO provides any updates to the necessary Frequency Response.</u>
<u>November 20</u>	<u>The ERO provides the fractional responsibility of each BA for the Interconnection's FRO and Minimum FBS to the BAs.</u>

BAL-003-2 – Frequency Response and Frequency Bias Setting
~~Standard BAL-003-1.12 – Frequency Response and Frequency Bias Setting~~

January 30	The ERO reviews candidate frequency events and selects frequency events for the fourth quarter (September to November).
2 nd business day in February	Form1 is posted with all selected events for the year for BA usage by the ERO.
February 10	The ERO assigns FRO values to the BAs for the upcoming year.
March 7	BAs complete their frequency response sampling for all four quarters and their FBS calculation, returning the results to the ERO.
March 24	The ERO validates FBS values, computes the sum of all FBS values for each interconnection, and determines L10 values for the CPS 2 criterion for each BA as applicable.
Any time during first 3 business days of April (unless specified otherwise by the ERO)	The BA implements any changes to their FBS and L10 value.

A. Introduction

1. **Title:** Facility Interconnection Studies
2. **Number:** FAC-002-~~32~~
3. **Purpose:** To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 Planning Coordinator
 - 4.1.2 Transmission Planner
 - 4.1.3 Transmission Owner
 - 4.1.4 Distribution Provider
 - 4.1.5 Generator Owner
 - 4.1.6 Applicable Generator Owner
 - 4.1.6.1 Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.
 - ~~4.1.7 Load Serving Entity~~
5. **Effective Date:** ~~See Implementation Plan. The first day of the first calendar quarter that is one year after the date that this standard is approved by an applicable governmental authority or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is one year after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.~~

B. Requirements and Measures

- R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
 - 1.1. The reliability impact of the new interconnection, or materially modified existing interconnection, on affected system(s);
 - 1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;
 - 1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and

- 1.4.** Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.
- M1.** Each Transmission Planner or each Planning Coordinator shall have evidence (such as study reports, including documentation of reliability issues) that it met all requirements in Requirement R1.
- R2.** Each Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M2.** Each Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R2.
- R3.** Each Transmission Owner, ~~and~~ each Distribution Provider, ~~and each Load-Serving Entity~~ seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M3.** Each Transmission Owner, ~~and~~ each Distribution Provider, ~~and each Load-Serving Entity~~ shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R3.
- R4.** Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or materially modified interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M4.** Each Transmission Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R4.
- R5.** Each applicable Generator Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M5.** Each applicable Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R5.

~~C. Compliance~~**~~1. Compliance Monitoring Process~~****~~1.1. Compliance Enforcement Authority~~**

~~As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.~~

~~1.2. Evidence Retention~~

~~The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.~~

~~The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner, and applicable Generator Owner, and Load Serving Entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:~~

~~The responsible entities shall retain documentation as evidence for three years.~~

~~If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.~~

~~The CEA shall keep the last audit records and all requested and submitted subsequent audit records.~~

~~1.3. Compliance Monitoring and Assessment Processes:~~

~~Compliance Audit~~

~~Self-Certification~~

~~Spot Check~~

~~Compliance Investigation~~

~~Self-Reporting~~

~~Complaint~~

~~1.4. Additional Compliance Information~~

~~None~~

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Long-term Planning	Medium	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities, but failed to study one of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities.
R2	Long-term Planning	Medium	The Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities, coordinated and cooperated on studies	The Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities, coordinated and cooperated on studies	The Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities, coordinated and cooperated on studies	The Generator Owner seeking to interconnect new generation Facilities, or to materially modify existing interconnections of generation Facilities, failed to coordinate and cooperate on

FAC-002-~~2~~3 — Facility Interconnection Studies

			with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	studies with its Transmission Planner or Planning Coordinator.
R3	Long-term Planning	Medium	The Transmission Owner, or Distribution Provider, or Load-Serving Entity seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Transmission Owner, or Distribution Provider, or Load-Serving Entity seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Transmission Owner, or Distribution Provider, or Load-Serving Entity seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Transmission Owner, or Distribution Provider, or Load-Serving Entity seeking to interconnect new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.

FAC-002-2.3 — Facility Interconnection Studies

R4	Long-term Planning	Medium	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or materially modified interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or materially modified interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or materially modified interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or materially modified interconnections to its Facilities.
R5	Long-term Planning	Medium	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities.

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None

Application Guidelines

Guidelines and Technical Basis

Entities should have documentation to support the technical rationale for determining whether an existing interconnection was “materially modified.” Recognizing that what constitutes a “material modification” will vary from entity to entity, the intent is for this determination to be based on engineering judgment.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	January 13, 2006	Removed duplication of “Regional Reliability Organizations(s).	Errata
1	August 5, 2010	Modified to address Order No. 693 Directives contained in paragraph 693. Adopted by the NERC Board of Trustees.	Revised
1	February 7, 2013	R2 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
1	November 21, 2013	R2 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees.	
2	November 6, 2014	FERC letter order issued approving FAC-002-2.	
<u>3</u>		<u>Adopted by the Board of Trustees.</u>	

Standard IRO-010-23 — Reliability Coordinator Data Specification and Collection

A. Introduction

1. **Title:** Reliability Coordinator Data Specification and Collection
2. **Number:** IRO-010-~~32~~
3. **Purpose:** To prevent instability, uncontrolled separation, or Cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
 - 4.1. Reliability Coordinator.
 - 4.2. Balancing Authority.
 - 4.3. Generator Owner.
 - 4.4. Generator Operator.
 - ~~4.5. Load Serving Entity.~~
 - ~~4.6.4.5.~~ _____ Transmission Operator.
 - ~~4.7.4.6.~~ _____ Transmission Owner.
 - ~~4.8.4.7.~~ _____ Distribution Provider.
5. ~~Proposed Effective Date:~~ See Implementation Plan.
- ~~6. Background~~
See Project 2014-03 ~~project page.~~

B. Requirements

- R1. The Reliability Coordinator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include but not be limited to: *(Violation Risk Factor: Low) (Time Horizon: Operations Planning)*
 - 1.1. A list of data and information needed by the Reliability Coordinator to support its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments including non-BES data and external network data, as deemed necessary by the Reliability Coordinator.
 - 1.2. Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability.
 - 1.3. A periodicity for providing data.
 - 1.4. The deadline by which the respondent is to provide the indicated data.

Standard IRO-010-2.3 — Reliability Coordinator Data Specification and Collection

- M1.** The Reliability Coordinator shall make available its dated, current, in force documented specification for data.
- R2.** The Reliability Coordinator shall distribute its data specification to entities that have data required by the Reliability Coordinator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
- M2.** The Reliability Coordinator shall make available evidence that it has distributed its data specification to entities that have data required by the Reliability Coordinator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. This evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, date and contents, or e-mail records.
- R3.** Each Reliability Coordinator, Balancing Authority, Generator Owner, Generator Operator, ~~Load-Serving Entity~~, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications using: (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations*)
- 3.1** A mutually agreeable format
- 3.2** A mutually agreeable process for resolving data conflicts
- 3.3** A mutually agreeable security protocol
- M3.** The Reliability Coordinator, Balancing Authority, Generator Owner, Generator Operator, ~~Load-Serving Entity~~, Reliability Coordinator, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall make available evidence that it satisfied the obligations of the documented specification using the specified criteria. Such evidence could include but is not limited to electronic or hard copies of data transmittals or attestations of receiving entities.

~~C. Compliance~~~~**1. Compliance Monitoring Process**~~~~**1.1. Compliance Enforcement Authority**~~

~~As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.~~

~~**1.2 Compliance Monitoring and Assessment Processes**~~

~~As defined in the NERC Rules of Procedure, “Compliance Monitoring and Assessment Processes” refers to the identification of the processes that will be used to evaluate~~

Standard IRO-010-2.3 — Reliability Coordinator Data Specification and Collection

~~data or information for the purpose of assessing performance or outcomes with the associated reliability standard.~~

1.3. Data Retention

~~The Reliability Coordinator, Balancing Authority, Generator Owner, Generator Operator, Load Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider shall each keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:~~

~~The Reliability Coordinator shall retain its dated, current, in force documented specification for the data necessary for it to perform its Operational Planning Analyses, Real time monitoring, and Real time Assessments for Requirement R1, Measure M1 as well as any documents in force since the last compliance audit.~~

~~The Reliability Coordinator shall keep evidence for three calendar years that it has distributed its data specification to entities that have data required by the Reliability Coordinator's Operational Planning Analyses, Real time monitoring, and Real time Assessments for Requirement R2, Measure M2.~~

~~Each Reliability Coordinator, Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification shall retain evidence for the most recent 90 calendar days that it has satisfied the obligations of the documented specifications in accordance with Requirement R3 and Measurement M3.~~

~~The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.~~

1.4. Additional Compliance Information

~~None.~~

Standard IRO-010-2.3 — Reliability Coordinator Data Specification and Collection

~~Table of Compliance Elements~~

R#	Time Horizon	VRF	Violation Severity Levels			
			Lower	Moderate	High	Severe
R1	Operations Planning	Low	<p>The Reliability Coordinator did not include one of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.</p>	<p>The Reliability Coordinator did not include two of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.</p>	<p>The Reliability Coordinator did not include three of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.</p>	<p>The Reliability Coordinator did not include any of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.</p> <p>OR,</p> <p>The Reliability Coordinator did not have a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time</p>

Standard IRO-010-2.3 — Reliability Coordinator Data Specification and Collection

R#	Time Horizon	VRF	Violation Severity Levels			
			Lower	Moderate	High	Severe
						monitoring, and Real-time Assessments.
<p>For the Requirement R2 VSLs only, the intent of the SDT is to start with the Severe VSL first and then to work your way to the left until you find the situation that fits. In this manner, the VSL will not be discriminatory by size of entity. If a small entity has just one affected reliability entity to inform, the intent is that that situation would be a Severe violation.</p>						
R2	Operations Planning	Low	The Reliability Coordinator did not distribute its data specification as developed in Requirement R1 to one entity, or 5% or less of the entities, whichever is greater, that have data required by the Reliability Coordinator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Reliability Coordinator did not distribute its data specification as developed in Requirement R1 to two entities, or more than 5% and less than or equal to 10% of the reliability entities, whichever is greater, that have data required by the Reliability Coordinator's Operational Planning Analyses, and Real-time monitoring, and Real-time	The Reliability Coordinator did not distribute its data specification as developed in Requirement R1 to three entities, or more than 10% and less than or equal to 15% of the reliability entities, whichever is greater, that have data required by the Reliability Coordinator's Operational Planning Analyses, Real-time	The Reliability Coordinator did not distribute its data specification as developed in Requirement R1 to four or more entities, or more than 15% of the entities, whichever is greater, that have data required by the Reliability Coordinator's Operational Planning Analyses, Real-time monitoring, and Real-time

Standard IRO-010-2.3 — Reliability Coordinator Data Specification and Collection

R#	Time Horizon	VRF	Violation Severity Levels			
			Lower	Moderate	High	Severe
				Assessments.	monitoring, and Real-time Assessments.	Assessments.
R3	Operations Planning, Same-Day Operations, Real-time Operations	Medium	The responsible entity receiving a data specification in Requirement R2 satisfied the obligations of the documented specifications for data but failed to follow one of the criteria shown in Parts 3.1—3.3.	The responsible entity receiving a data specification in Requirement R2 satisfied the obligations of the documented specifications for data but failed to follow two of the criteria shown in Parts 3.1—3.3.	The responsible entity receiving a data specification in Requirement R2 satisfied the obligations of the documented specifications for data but failed to follow any of the criteria shown in Parts 3.1—3.3.	The responsible entity receiving a data specification in Requirement R2 did not satisfy the obligations of the documented specifications for data.

IRO-010-3 — Reliability Coordinator Data Specification and Collection Standard IRO-010-2
— Guidelines and Technical Basis

D. Regional Variances

None

E. Interpretations

None _____

F. Associated Documents

None

Version History

Version	Date	Action	Change Tracking
1	October 17, 2008	Adopted by Board of Trustees	New
1a	August 5, 2009	Added Appendix 1: Interpretation of R1.2 and R3 as approved by Board of Trustees	Addition
1a	March 17, 2011	Order issued by FERC approving IRO-010-1a (approval effective 5/23/11)	
1a	November 19, 2013	Updated VRFs based on June 24, 2013 approval	
2	April 2014	Revisions pursuant to Project 2014-03	
2	November 13, 2014	Adopted by NERC Board of Trustees	Revisions under Project 2014-03
2	November 19, 2015	FERC approved IRO-010-2. Docket No. RM15-16-000	
<u>3</u>		<u>Adopted by NERC Board of Trustees</u>	

Guidelines and Technical Basis

Rationale:

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT adoption, the text from the rationale text boxes was moved to this section.

Rationale for Definitions:

Changes made to the proposed definitions were made in order to respond to issues raised in NOPR paragraphs 55, 73, and 74 dealing with analysis of SOLs in all time horizons, questions on Protection Systems and Special Protection Systems in NOPR paragraph 78, and recommendations on phase angles from the SW Outage Report (recommendation 27). The intent of such changes is to ensure that Real-time Assessments contain sufficient details to result in an appropriate level of situational awareness. Some examples include: 1) analyzing phase angles which may result in the implementation of an Operating Plan to adjust generation or curtail transactions so that a Transmission facility may be returned to service, or 2) evaluating the impact of a modified Contingency resulting from the status change of a Special Protection Scheme from enabled/in-service to disabled/out-of-service.

Rationale for Applicability Changes:

Changes were made to applicability based on IRO FYRT recommendation to address the need for UVLS and UFLS information in the data specification.

The Interchange Authority was removed because activities in the Coordinate Interchange standards are performed by software systems and not a responsible entity. The software, not a functional entity, performs the task of accepting and disseminating interchange data between entities. -The Balancing Authority is the responsible functional entity for these tasks.

The Planning Coordinator and Transmission Planner were removed from Draft 2 as those entities would not be involved in a data specification concept as outlined in this standard.

Rationale:

Proposed Requirement R1, Part 1.1:

Is in response to issues raised in NOPR paragraph 67 on the need for obtaining non-BES and external network data necessary for the Reliability Coordinator to fulfill its responsibilities.

Proposed Requirement R1, Part 1.2:

Is in response to NOPR paragraph 78 on relay data.

Proposed Requirement R3, Part 3.3:

IRO-010-3 — Reliability Coordinator Data Specification and Collection Standard IRO-010-2
— Guidelines and Technical Basis

Is in response to NOPR paragraph 92 where concerns were raised about data exchange through secured networks.

Corresponding changes have been made to proposed TOP-003-3.

A. Introduction

1. **Title:** Demand and Energy Data
2. **Number:** MOD-031-~~2~~3
3. **Purpose:** To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.
4. **Applicability:**

4.1. Functional Entities:

~~4.1.1 Planning Authority and Planning Coordinator (hereafter collectively referred to as the “Planning Coordinator”)~~

~~4.1.24.1.1 This proposed standard combines “Planning Authority” with “Planning Coordinator” in the list of applicable functional entities. The NERC Functional Model lists “Planning Coordinator” while the registration criteria list “Planning Authority,” and they are not yet synchronized. Until that occurs, the proposed standard applies to both “Planning Authority” and “Planning Coordinator.”~~

~~4.1.34.1.2~~ Transmission Planner

~~4.1.44.1.3~~ Balancing Authority

~~4.1.54.1.4~~ Resource Planner

~~4.1.6 Load Serving Entity~~

~~4.1.74.1.5~~ Distribution Provider

5. **Effective Date:** See the MOD-031-~~2~~ Implementation Plan.

- ~~6. Background:~~

~~To ensure that various forms of historical and forecast Demand and energy data and information is available to the parties that perform reliability studies and assessments, authority is needed to collect the applicable data.~~

~~The collection of Demand, Net Energy for Load and Demand Side Management data requires coordination and collaboration between Planning Authorities (Planning Coordinators), Transmission and Resource Planners, Load Serving Entities and Distribution Providers. Ensuring that planners and operators have access to complete and accurate load forecasts — as well as the supporting methods and assumptions used to develop these forecasts — enhances the reliability of the Bulk Electric System. Consistent documenting and information sharing activities will also improve efficient planning practices and support the identification of needed system reinforcements. Furthermore, collection of actual Demand and Demand Side Management performance during the prior year will allow for comparison to prior forecasts and further contribute to enhanced accuracy of load forecasting practices.~~

~~Data provided under this standard is generally considered confidential by Planning Coordinators and Balancing Authorities receiving the data. Furthermore, data reported to a Regional Entity is subject to the confidentiality provisions in Section 1500 of the North American Electric Reliability Corporation Rules of Procedure and is typically aggregated with data of other functional entities in a non-attributable manner. While this standard allows for the sharing of data necessary to perform certain reliability studies and assessments, any data received under this standard for which an applicable entity has made a claim of confidentiality should be maintained as confidential by the receiving entity.~~

B. Requirements and Measures

- R1.** Each Planning Coordinator or Balancing Authority that identifies a need for the collection of Total Internal Demand, Net Energy for Load, and Demand Side Management data shall develop and issue a data request to the applicable entities in its area. The data request shall include: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 1.1.** A list of Transmission Planners, Balancing Authorities, ~~Load Serving Entities~~, and Distribution Providers that are required to provide the data (“Applicable Entities”).
 - 1.2.** A timetable for providing the data. (A minimum of 30 calendar days must be allowed for responding to the request).
 - 1.3.** A request to provide any or all of the following actual data, as necessary:
 - 1.3.1.** Integrated hourly Demands in megawatts for the prior calendar year.
 - 1.3.2.** Monthly and annual integrated peak hour Demands in megawatts for the prior calendar year.
 - 1.3.2.1.** If the annual peak hour actual Demand varies due to weather-related conditions (e.g., temperature, humidity or wind speed), the Applicable Entity shall also provide the weather normalized annual peak hour actual Demand for the prior calendar year.
 - 1.3.3.** Monthly and annual Net Energy for Load in gigawatthours for the prior calendar year.
 - 1.3.4.** Monthly and annual peak hour controllable and dispatchable Demand Side Management under the control or supervision of the System Operator in megawatts for the prior calendar year. Three values shall be reported for each hour: 1) the committed megawatts (the amount under control or supervision), 2) the dispatched megawatts (the amount, if any, activated for use by the System Operator), and 3) the realized megawatts (the amount of actual demand reduction).

- 1.4. A request to provide any or all of the following forecast data, as necessary:
 - 1.4.1. Monthly peak hour forecast Total Internal Demands in megawatts for the next two calendar years.
 - 1.4.2. Monthly forecast Net Energy for Load in gigawatthours for the next two calendar years.
 - 1.4.3. Peak hour forecast Total Internal Demands (summer and winter) in megawatts for ten calendar years into the future.
 - 1.4.4. Annual forecast Net Energy for Load in gigawatthours for ten calendar years into the future.
 - 1.4.5. Total and available peak hour forecast of controllable and dispatchable Demand Side Management (summer and winter), in megawatts, under the control or supervision of the System Operator for ten calendar years into the future.
- 1.5. A request to provide any or all of the following summary explanations, as necessary:
 - 1.5.1. The assumptions and methods used in the development of aggregated Peak Demand and Net Energy for Load forecasts.
 - 1.5.2. The Demand and energy effects of controllable and dispatchable Demand Side Management under the control or supervision of the System Operator.
 - 1.5.3. How Demand Side Management is addressed in the forecasts of its Peak Demand and annual Net Energy for Load.
 - 1.5.4. How the controllable and dispatchable Demand Side Management forecast compares to actual controllable and dispatchable Demand Side Management for the prior calendar year and, if applicable, how the assumptions and methods for future forecasts were adjusted.
 - 1.5.5. How the peak Demand forecast compares to actual Demand for the prior calendar year with due regard to any relevant weather-related variations (e.g., temperature, humidity, or wind speed) and, if applicable, how the assumptions and methods for future forecasts were adjusted.
- M1. The Planning Coordinator or Balancing Authority shall have a dated data request, either in hardcopy or electronic format, in accordance with Requirement R1.
- R2. Each Applicable Entity identified in a data request shall provide the data requested by its Planning Coordinator or Balancing Authority in accordance with the data request issued pursuant to Requirement R1. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M2. Each Applicable Entity shall have evidence, such as dated e-mails or dated transmittal letters that it provided the requested data in accordance with Requirement R2.

- R3.** The Planning Coordinator or the Balancing Authority shall provide the data listed under Requirement R1 Parts 1.3 through 1.5 for their area to the applicable Regional Entity within 75 calendar days of receiving a request for such data, unless otherwise agreed upon by the parties. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M3.** Each Planning Coordinator or Balancing Authority, shall have evidence, such as dated e-mails or dated transmittal letters that it provided the data requested by the applicable Regional Entity in accordance with Requirement R3.
- R4.** Any Applicable Entity shall, in response to a written request for the data included in parts 1.3-1.5 of Requirement R1 from a Planning Coordinator, Balancing Authority, Transmission Planner or Resource Planner with a demonstrated need for such data in order to conduct reliability assessments of the Bulk Electric System, provide or otherwise make available that data to the requesting entity. This requirement does not modify an entity's obligation pursuant to Requirement R2 to respond to data requests issued by its Planning Coordinator or Balancing Authority pursuant to Requirement R1. Unless otherwise agreed upon, the Applicable Entity: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- shall not be required to alter the format in which it maintains or uses the data;
 - shall provide the requested data within 45 calendar days of the written request, subject to part 4.1 of this requirement; unless providing the requested data would conflict with the Applicable Entity's confidentiality, regulatory, or security requirements
- 4.1.** If the Applicable Entity does not provide data requested because (1) the requesting entity did not demonstrate a reliability need for the data; or (2) providing the data would conflict with the Applicable Entity's confidentiality, regulatory, or security requirements, the Applicable Entity shall, within 30 calendar days of the written request, provide a written response to the requesting entity specifying the data that is not being provided and on what basis.
- M4.** Each Applicable Entity identified in Requirement R4 shall have evidence such as dated e-mails or dated transmittal letters that it provided the data requested or provided a written response specifying the data that is not being provided and the basis for not providing the data in accordance with Requirement R4.

~~C. Compliance~~~~1. Compliance Monitoring Process~~~~1.1. Compliance Enforcement Authority~~

~~As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.~~

~~1.2. Evidence Retention~~

~~The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.~~

~~The Applicable Entity shall keep data or evidence to show compliance with Requirements R1 through R4, and Measures M1 through M4, since the last audit, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.~~

~~If an Applicable Entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved, or for the time specified above, whichever is longer.~~

~~The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.~~

~~1.3. Compliance Monitoring and Assessment Processes:~~

~~Compliance Audit~~

~~Self-Certification~~

~~Spot Checking~~

~~Compliance Investigation~~

~~Self-Reporting~~

~~Complaint~~

~~1.4. Additional Compliance Information~~

~~None~~

MOD-031-2.3 — Demand and Energy Data

Table of Compliance Elements

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Long-term Planning	Medium	N/A	N/A	N/A	The Planning Coordinator or Balancing Authority developed and issued a data request but failed to include either the entity(s) necessary to provide the data or the timetable for providing the data.
R2	Long-term Planning	Medium	<p>The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide all of the data requested in Requirement R1 part 1.5.1 through part 1.5.5</p> <p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, provided the data requested in Requirement R1, but</p>	<p>The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide one of the requested items in Requirement R1 part 1.3.1 through part 1.3.4</p> <p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide one of the requested items in Requirement R1 part</p>	<p>The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide two of the requested items in Requirement R1 part 1.3.1 through part 1.3.4</p> <p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide two of the requested items in Requirement R1 part</p>	<p>The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide three or more of the requested items in Requirement R1 part 1.3.1 through part 1.3.4</p> <p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide three or more of the requested items in Requirement R1 part 1.4.1 through part 1.4.5</p>

MOD-031-~~2~~3 — Demand and Energy Data

			<p>did so after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2 but prior to 6 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2.</p>	<p>1.4.1 through part 1.4.5</p> <p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, provided the data requested in Requirement R1, but did so 6 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2 but prior to 11 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2.</p>	<p>1.4.1 through part 1.4.5</p> <p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, provided the data requested in Requirement R1, but did so 11 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2 but prior to 15 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2.</p>	<p>OR</p> <p>The Applicable Entity, as defined in the data request developed in Requirement R1, failed to provide the data requested in the timetable provided pursuant to Requirement R1 prior to 16 days after the date indicated in the timetable provided pursuant to Requirement R1 part 1.2.</p>
R3	Long term Planning	Medium	<p>The Planning Coordinator or Balancing Authority, in response to a request by the Regional Entity, made available the data requested, but did so after 75 days</p>	<p>The Planning Coordinator or Balancing Authority, in response to a request by the Regional Entity, made available the data requested, but did so after 80 days</p>	<p>The Planning Coordinator or Balancing Authority, in response to a request by the Regional Entity, made available the data requested, but did so after 85 days</p>	<p>The Planning Coordinator or Balancing Authority, in response to a request by the Regional Entity, failed to make available the data requested prior to 91 days</p>

MOD-031-2.3 — Demand and Energy Data

			from the date of request but prior to 81 days from the date of the request.	from the date of request but prior to 86 days from the date of the request.	from the date of request but prior to 91 days from the date of the request.	or more from the date of the request.
R4	Long-term Planning	Medium	<p>The Applicable Entity provided or otherwise made available the data to the requesting entity but did so after 45 days from the date of request but prior to 51 days from the date of the request</p> <p>OR</p> <p>The Applicable Entity that is not providing the data requested provided a written response specifying the data that is not being provided and on what basis but did so after 30 days of the written request but prior to 36 days of the written request.</p>	<p>The Applicable Entity provided or otherwise made available the data to the requesting entity but did so after 50 days from the date of request but prior to 56 days from the date of the request</p> <p>OR</p> <p>The Applicable Entity that is not providing the data requested provided a written response specifying the data that is not being provided and on what basis but did so after 35 days of the written request but prior to 41 days of the written request.</p>	<p>The Applicable Entity provided or otherwise made available the data to the requesting entity but did so after 55 days from the date of request but prior to 61 days from the date of the request</p> <p>OR</p> <p>The Applicable Entity that is not providing the data requested provided a written response specifying the data that is not being provided and on what basis but did so after 40 days of the written request but prior to 46 days of the written request.</p>	<p>The Applicable Entity failed to provide or otherwise make available the data to the requesting entity within 60 days from the date of the request</p> <p>OR</p> <p>The Applicable Entity that is not providing the data requested failed to provide a written response specifying the data that is not being provided and on what basis within 45 days of the written request.</p>

MOD-031-~~2~~3 — Demand and Energy Data

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	May 6, 2014	Adopted by the NERC Board of Trustees	
1	February 19, 2015	FERC order approving MOD-031-1	
2	November 5, 2015	Adopted by the NERC Board of Trustees	
2	February 18, 2016	FERC order approving MOD-031-2. Docket No. RD16-1-000	
<u>3</u>		<u>Adopted by the NERC Board of Trustees</u>	

Guidelines and Technical Basis

Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

Rationale for R1:

Rationale for R1: To ensure that when Planning Coordinators (PCs) or Balancing Authorities (BAs) request data (R1), they identify the entities that must provide the data (Applicable Entity in part 1.1), the data to be provided (parts 1.3 – 1.5) and the due dates (part 1.2) for the requested data.

For Requirement R1 part 1.3.2.1, if the Demand does not vary due to weather-related conditions (e.g., temperature, humidity or wind speed), or the weather assumed in the forecast was the same as the actual weather, the weather normalized actual Demand will be the same as the actual demand reported for Requirement R1 part 1.3.2. Otherwise the annual peak hour weather normalized actual Demand will be different from the actual demand reported for Requirement R1 part 1.3.2.

Balancing Authorities are included here to reflect a practice in the WECC Region where BAs are the entity that perform this requirement in lieu of the PC.

Rationale for R2:

This requirement will ensure that entities identified in Requirement R1, as responsible for providing data, provide the data in accordance with the details described in the data request developed in accordance with Requirement R1. In no event shall the Applicable Entity be required to provide data under this requirement that is outside the scope of parts 1.3 - 1.5 of Requirement R1.

Rationale for R3:

This requirement will ensure that the Planning Coordinator or when applicable, the Balancing Authority, provides the data requested by the Regional Entity.

Rationale for R4:

This requirement will ensure that the Applicable Entity will make the data requested by the Planning Coordinator or Balancing Authority in Requirement R1 available to other applicable entities (Planning Coordinator, Balancing Authority, Transmission Planner or Resource Planner) unless providing the data would conflict with the Applicable Entity's confidentiality, regulatory, or security requirements. The sharing of documentation of the supporting methods and assumptions used to develop forecasts as well as information-sharing activities will improve the efficiency of planning practices and support the identification of needed system reinforcements.

MOD-031-3 — Demand and Energy Data Application Guidelines

The obligation to share data under Requirement R4 does not supersede or otherwise modify any of the Applicable Entity's existing confidentiality obligations. For instance, if an entity is prohibited from providing any of the requested data pursuant to confidentiality provisions of an Open Access Transmission Tariff or a contractual arrangement, Requirement R4 does not require the Applicable Entity to provide the data to a requesting entity. Rather, under Part 4.1, the Applicable Entity must simply provide written notification to the requesting entity that it will not be providing the data and the basis for not providing the data. If the Applicable Entity is subject to confidentiality obligations that allow the Applicable Entity to share the data only if certain conditions are met, the Applicable Entity shall ensure that those conditions are met within the 45-day time period provided in Requirement R4, communicate with the requesting entity regarding an extension of the 45-day time period so as to meet all those conditions, or provide justification under Part 4.1 as to why those conditions cannot be met under the circumstances.

A. Introduction

1. **Title:** Nuclear Plant Interface Coordination
2. **Number:** NUC-001-~~43~~
3. **Purpose:** This standard requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 Nuclear Plant Generator Operators.
 - 4.2. Transmission Entities shall mean all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs). Such entities may include one or more of the following:
 - 4.2.1 Transmission Operators.
 - 4.2.2 Transmission Owners.
 - 4.2.3 Transmission Planners.
 - 4.2.4 Transmission Service Providers.
 - 4.2.5 Balancing Authorities.
 - 4.2.6 Reliability Coordinators.
 - 4.2.7 Planning Coordinators.
 - 4.2.8 Distribution Providers.
 - ~~4.2.9—Load Serving Entities.~~
 - ~~4.2.104.2.9~~ 4.2.10 Generator Owners.
 - ~~4.2.114.2.10~~ 4.2.10 Generator Operators.

~~5. **Effective Date:** See Implementation Plan.~~

~~**Background:**—Project 2012-13 Nuclear Power Interface Coordination seeks to implement the changes that were proposed by the NUC FYRT. The NUC FYRT was appointed by the Standards Committee Executive Committee on April 22, 2013. The NUC FYRT reviewed the NUC-001-2.1 standard to identify opportunities for consolidation and additional improvements. The NUC FYRT posted its recommendation to revise NUC-001-2.1 for industry comment on July 27, 2013. The NUC FYRT considered comments and submitted its final recommendation to revise NUC-001-2.1, along with a Standards Authorization Request (SAR) to the Standards Committee on October 17, 2013. The Standards Committee accepted~~

~~the recommendation of the FYRT and appointed the team as the Standard Drafting Team (SDT) to implement the recommendation.~~

~~5.— **Effective Dates:**— First day of the first calendar quarter that is twelve months beyond the date that this standard is approved by applicable regulatory authorities, or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve months after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.~~

B. Requirements and Measures

- R1.** The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M1.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities.
- R2.** The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements¹ that include mutually agreed to NPIRs and document how the Nuclear Plant Generator Operator and the applicable Transmission Entities shall address and implement these NPIRs. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M2.** The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the currently effective Agreement(s) which document how the Nuclear Plant Generator Operator and the applicable Transmission Entities address and implement the NPIRs available for inspection upon request of the Compliance Enforcement Authority.
- R3.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall incorporate the NPIRs into their planning analyses of the electric system and shall communicate the results of these analyses to the Nuclear Plant Generator Operator.: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- M3.** Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Enforcement Authority, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The Compliance Enforcement

¹ Agreements may include mutually agreed upon procedures or protocols in effect between entities or between departments of a vertically integrated system.

Authority shall refer to the Agreements developed in accordance with this standard for specific requirements.

- R4.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*
- 4.1.** Incorporate the NPIRs into their operating analyses of the electric system.
 - 4.2.** Operate the electric system to meet the NPIRs.
 - 4.3.** Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.
- M4.** Each Transmission Entity responsible for operating the electric system in accordance with the Agreement shall demonstrate or provide evidence of the following, upon request of the Compliance Enforcement Authority:
- The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1)
 - The electric system was operated to meet the NPIRs. (Requirement 4.2)
 - The Transmission Entity informed the Nuclear Plant Generator Operator when it became aware it lost the capability to assess the operation of the electric system affecting the NPIRs
- R5.** Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*
- M5.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nuclear power plant is being operated consistent with the NPIRs.
- R6.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities and the Nuclear Plant Generator Operator shall coordinate outages and maintenance activities which affect the NPIRs. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- M6.** The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs.
- R7.** Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall inform the applicable Transmission Entities of actual or proposed changes to nuclear plant design (e.g., protective relay setpoints),

configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

- M7.** The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Transmission Entities to meet the NPIRs.
- R8.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*
- M8.** The Transmission Entities shall each provide evidence that the entities informed the Nuclear Plant Generator Operator of changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs.
- R9.** The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2.
- Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements.
 - Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. : *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 9.1.** Retired. *[Note: Part 9.1 was retired under the Paragraph 81 project. The NUC SDT proposes to leave this Part blank to avoid renumbering Requirement parts that would impact existing agreements throughout the industry.]*

- 9.2. Technical requirements and analysis:**
 - 9.2.1.** Identification of parameters, limits, configurations, and operating scenarios included in the NPIRs and, as applicable, procedures for providing any specific data not provided within the Agreement.
 - 9.2.2.** Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.
 - 9.2.3.** Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.
- 9.3. Operations and maintenance coordination**
 - 9.3.1.** Designation of ownership of electrical facilities at the interface between the electric system and the nuclear plant and responsibilities for operational control coordination and maintenance of these facilities.
 - 9.3.2.** Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.
 - 9.3.3.** Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.
 - 9.3.4.** Provisions to address mitigating actions needed to avoid violating NPIRs and to address periods when responsible Transmission Entity loses the ability to assess the capability of the electric system to meet the NPIRs. These provisions shall include responsibility to notify the Nuclear Plant Generator Operator within a specified time frame.
 - 9.3.5.** Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power.
 - 9.3.6.** Coordination of physical and cyber security protection at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.
 - 9.3.7.** Coordination of the NPIRs with transmission system Remedial Action Schemes and any programs that reduce or shed load based on underfrequency or undervoltage.
- 9.4. Communications and training Administrative elements:**
 - 9.4.1.** Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.
 - 9.4.2.** Provisions for coordination during an off-normal or emergency event affecting the NPIRs, including the need to provide timely information explaining the event, an estimate of when the system will be returned to a normal state, and the actual time the system is returned to normal.

- 9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.
- 9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs.
- 9.4.5. Provisions for personnel training, as related to NPIRs.

M9. The Nuclear Plant Generator Operator shall have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Enforcement Authority. Each Transmission Entity shall have a copy of the Agreement(s) addressing the elements in Requirement 9 for which it is responsible available for inspection upon request of the Compliance Enforcement Authority.

~~C. Compliance~~

~~1. Compliance Monitoring Process~~

~~1.1. Compliance Enforcement Authority~~

~~Regional Entity~~

~~1.2. Compliance Monitoring and Assessment Processes:~~

~~Compliance Audits~~

~~Self-Certifications~~

~~Spot-Checking~~

~~Compliance Violation Investigations~~

~~Self-Reporting~~

~~Complaints Text~~

~~1.3. Data Retention~~

~~The Responsible Entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:~~

- ~~• For Measure 1, the Nuclear Plant Generator Operator shall keep its latest transmittals and receipts.~~
- ~~• For Measure 2, the Nuclear Plant Generator Operator and each Transmission Entity shall have its current, in-force Agreement.~~
- ~~• For Measure 3, the Transmission Entity shall have the latest planning analysis results.~~

NUC-001-34— Nuclear Plant Interface Coordination

- ~~For Measures 4, 6 and 8, the Transmission Entity shall keep evidence for two years plus current.~~
- ~~For Measures 5, 6 and 7, the Nuclear Plant Generator Operator shall keep evidence for two years plus current.~~

~~If a Responsible Entity is found non-compliant it shall keep information related to the noncompliance until found compliant.~~

~~The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.~~

~~1.4. Additional Compliance Information~~

~~None~~

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1		Medium	The Nuclear Plant Generator Operator provided the NPIRs to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIRs to two of the applicable entities unless there were only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIRs to more than two of applicable entities. OR For a particular nuclear power plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs
R2		Medium	N/A	N/A	N/A	The Nuclear Plant Generator Operator or the applicable Transmission Entity does not have in effect one or more agreements that include mutually agreed to NPIRs and document the implementation of the NPIRs.
R3		Medium	N/A	The responsible entity incorporated the NPIRs into its planning analyses but did not communicate	N/A	The responsible entity did not incorporate the NPIRs into its planning analyses of the electric system.

NUC-001-~~34~~— Nuclear Plant Interface Coordination

				the results to the Nuclear Plant Generator Operator.		
R4		High	N/A	The responsible entity did not comply with Requirement R4, Part 4.3.	The responsible entity did not comply with Requirement R4, Part R4.1.	The responsible entity did not comply with Requirement R4, Part R4.2.
R5		High	N/A	N/A	N/A	The Nuclear Plant Generator Operator failed to operate per the NPIRs developed in accordance with this standard.
R6		Medium	N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.	N/A
R7		High	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of proposed changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits or capabilities that directly impact the ability of the electric system to meet the NPIRs.
R8		High	The applicable Transmission Entities did not inform the Nuclear	N/A	The applicable Transmission Entities did not inform the Nuclear	The applicable Transmission Entities did not inform the Nuclear

			Plant Generator Operator of proposed changes to transmission system design, configuration (e.g. protective relay setpoints), operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.		Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that directly impacts the ability of the electric system to meet the NPIRs.
R9		Medium		The Agreement(s) identified in R2, between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include up to 20% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to that entity.	The Agreement(s) identified in R2, between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include greater than 20%, but less than 40% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to the entity.	The Agreement(s) identified in R2, between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include 40% or more of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to the entity.

D. Regional Variances

The design basis for Canadian (CANDU) nuclear power plants (NPPs) does not result in the same licensing requirements as U.S. NPPs. Nuclear Regulatory Commission (NRC) design criteria specifies that in addition to emergency on-site electrical power, electrical power from the electric network also be provided to permit safe shutdown. There are no equivalent Canadian Regulatory requirements for electrical power from the electric network to be provided to permit safe shutdown. Therefore the definition of Nuclear Plant Licensing Requirements (NPLR) for Canadian CANDU NPPs will be as follows:

Canadian Nuclear Plant Licensing Requirements (CNPLR) are requirements included in the design basis of the nuclear plant and are statutorily mandated for the operation of the plant; when used in this standard, NPLR shall mean nuclear power plant licensing requirements for avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

E. Interpretations

None.

F. Associated Documents

None

Version History

NUC-001-4— Nuclear Plant Interface Coordination

Version	Date	Action	Change Tracking
1	May 2, 2007	Approved by Board of Trustees	New
2	August 5, 2009	Adopted by Board of Trustees	Revised. Modifications for Order 716 to Requirement R9.3.5 and footnote 1; modifications to bring compliance elements into conformance with the latest version of the ERO Rules of Procedure.
2	January 22, 2010	Approved by FERC on January 21, 2010. Added Effective Date	Update
2	February 7, 2013	R9.1, R9.1.1, R9.1.2, R9.1.3, and R9.1.4 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
2	November 21, 2013	R9.1, R9.1.1, R9.1.2, R9.1.3, and R9.1.4 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2.1	April 11, 2012	Errata approved by the Standards Committee; (Capitalized “Protection System” in accordance with Implementation Plan for Project 2007-17 approval of revised definition of “Protection System”)	Errata associated with Project 2007-17
2.1	September 9, 2013	Informational filing submitted to reflect the revised definition of Protection System in accordance with the Implementation Plan for the revised term.	
3	March 2014	Modifications to implement the recommendations of the five-year review of NUC-001, which was accepted by the Standards Committee on October 17, 2013.	Revision
3	August 14, 2014	Adopted by the NERC Board of Trustees	
3	November 4, 2014	FERC letter order issued approving NUC-001-3	

NUC-001-4— Nuclear Plant Interface Coordination

<u>4</u>		<u>Adopted by the NERC Board of Trustees</u>	
----------	--	--	--

Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

Rationale for R5:

The NUC FYRT recommended R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements.

Rationale for R7 and R8:

The NUC FYRT recommended deleting “Protection Systems” in Requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively; and adding a parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design."

Rationale for R9:

The NUC FYRT recommended that R9 be revised to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements. In addition, for clarity in Part 9.4.1, the NUC FYRT recommended that "affecting the NPIRs" be inserted following "Provisions for communications" and "applicable unique" be inserted following ""definitions of."

Rationale for R9.3.7:

The term “Special Protection Systems” (SPS) was replaced with “Remedial Action Schemes” (RAS) in order to align with other current NERC standards development work in Project 2010-05.2: Special Protection Systems. Project 2010-05.2 has proposed to replace SPS with RAS throughout all of the NERC Standards in order to move to the use of a single term. RAS and SPS have the same definition in the NERC Glossary of Terms.

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

PRC-024-3 is posted for a 10-day final ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	December 2018
SAR posted for comment	December 2018 – January 2019
Standards Committee accepted the revised SAR	February 2019
45-day formal comment period with ballot	April – May 2019
45-day formal or informal comment period with additional ballot	September – November 2019

Anticipated Actions	Date
10-day final ballot	December 2019
Board adoption	February 2020

A. Introduction

1. **Title:** Generator Frequency and Voltage Protective Relay Settings for Generating Resources
2. **Number:** PRC-024-23
3. **Purpose:** Ensure Generator Owners To set their generator protection relays such that generating resource(s) units remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).
4. **Applicability:**

4.1. Generator Owner Functional Entities:

4.1.1 Generator Owners that apply protection listed in Section 4.2.1.

4.1.2 Transmission Owners (in the Quebec Interconnection only) that own a BES generator step-up (GSU) transformer or main power transformer (MPT)¹ and apply protection listed in Section 4.2.1.

4.1.3 Planning Coordinators (in the Quebec Interconnection only)

4.2. Facilities²:

4.2.1 Frequency, voltage, and volts per hertz protection (whether provided by relaying or functions within associated control systems) that respond to electrical signals and: (i) directly trip the generating resource(s); or (ii) provide signals to the generating resource(s) to either trip or cease injecting current; and are applied to the following:

4.2.1.1 BES generating resource(s).

4.2.1.2 BES GSU transformer(s).

4.2.1.3 High side of the generator-connected unit auxiliary transformer³ (UAT) installed on BES generating resource(s).

4.2.1.4 Individual dispersed power producing resource(s) identified in the BES Definition, Inclusion I4.

4.2.1.5 Elements that are designed primarily for the delivery of capacity from the individual dispersed power producing resources

¹ For the purpose of this standard, the MPT is the power transformer that steps up voltage from the collection system voltage to the nominal transmission/interconnecting system voltage for dispersed power producing resources.

² It is not required to install or activate the protections described in Facilities Section 4.2.

³ These transformers are variably referred to as station power UAT, or station service transformer(s) used to provide overall auxiliary power to the generating resource(s). This UAT is the transformer connected on the generator bus between the low side of the GSU and the generator terminal.

~~Standard PRC-024-23 — Generator Frequency and Voltage Protective Relay Settings for Generating Resources~~

identified in the BES Definition, Inclusion I4, to the point where those resources aggregate to greater than 75 MVA.

4.2.1.6 MPT⁴ of resource(s) identified in the BES Definition, Inclusion I4.

4.2.2 Exemptions: Protection on all auxiliary equipment within the generating Facility.

5. Effective Date: See the Implementation Plan for PRC 024-23.

⁴ For the purpose of this standard, the MPT is the power transformer that steps up voltage from the collection system voltage to the nominal transmission/interconnecting system voltage for dispersed power producing resources

~~D.B. Requirements and Measures~~

~~R1. Each Generator Owner shall set its applicable frequency protection⁵ that has generator frequency protective relaying¹ activated to trip its applicable generating unit(s) shall set its protective relaying in accordance with PRC-024 Attachment 1 such that the generator frequency protective relaying does not trip the applicable generating unit(s) protection does not cause the generating resource to trip or cease injecting current within the “no trip zone” of PRC-024 Attachment 1, subject to during a frequency excursion with the following exceptions:² [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]~~

- ~~Generating unit(s) Applicable frequency protection may may trip if the protective functions (such as out of step functions or loss of field functions) operate due to an impending be set to trip or cease injecting current within a portion of the “no trip zone” for documented and communicated regulatory or equipment limitations in accordance with Requirement R3. actual loss of synchronism or, for asynchronous generating units, due to instability in power conversion control equipment.~~

~~Generating unit(s) may trip if clearing a system fault necessitates disconnecting (a) generating unit(s).~~

~~M1. Generating unit(s) may trip within a portion of the “no trip zone” of PRC-024 Attachment 1 for documented and communicated regulatory or equipment limitations in accordance~~

⁵ Frequency, voltage, and volts per hertz protection (whether provided by relaying or functions within associated control systems) that respond to electrical signals and: (i) directly trip the generating resource(s); or (ii) provide signals to the generating resource(s) to either trip or cease injecting current.

¹ Each Generator Owner is not required to have frequency or voltage protective relaying (including but not limited to frequency and voltage protective functions for discrete relays, volts per hertz relays evaluated at nominal frequency, multi-function protective devices or protective functions within control systems that directly trip or provide tripping signals to the generator based on frequency or voltage inputs) installed or activated on its unit.

² For frequency protective relays associated with dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition, this requirement applies to frequency protective relays applied on the individual generating unit of the dispersed power producing resources, as well as frequency protective relays applied on equipment from the individual generating unit of the dispersed power producing resource up to the point of interconnection.

³ For the purposes of this standard, point of interconnection means the transmission (high voltage) side of the generator step-up or collector transformer.

⁴ For voltage protective relays associated with dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition, this requirement applies to voltage protective relays applied on the individual generating unit of the dispersed power producing resources, as well as voltage protective relays applied on equipment from the individual generating unit of the dispersed power producing resource up to the point of interconnection.

Standard PRC-024-23 — ~~Generator Frequency and Voltage Protective Relay Settings for Generating Resources~~

~~with Requirement R3. Each Generator Owner shall have evidence that the generator applicable frequency protective relays have been set in accordance with Requirement R1, such as dated setting sheets, calibration sheets, calculations, or other documentation.~~

~~**R3.R2.** Each Generator Owner shall set its applicable voltage protection⁵ in accordance with PRC-024 Attachment 2, that has generator voltage protective relaying⁴ activated to trip its applicable generating unit(s) shall set its protective relaying such that the generator voltage protective relaying does not trip the applicable protection does not cause the generating resource to trip or cease injecting current within the “no trip zone” during a voltage excursion at the high side of the GSU or MPT, generating unit(s) as a result of a voltage excursion (at the point of interconnection³) caused by an event on the transmission system external to the generating plant that remains within the “no trip zone” of PRC-024 Attachment 2. ⁴If the Transmission Planner allows less stringent voltage relay settings than those required to meet PRC-024 Attachment 2, then the Generator Owner shall set its protective relaying within the voltage recovery characteristics of a location-specific Transmission Planner’s study. Requirement R2 is subject to the following exceptions: [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]~~

- ~~• If the Transmission Planner allows less stringent voltage protection settings than those required to meet PRC-024 Attachment 2, then the Generator Owner may set its protection within the voltage recovery characteristics of a location-specific Transmission Planner’s study.~~
- ~~• Generating unit(s) may trip in accordance with a Special Protection System (SPS) or Remedial Action Scheme (RAS).~~
- ~~• Generating unit(s) may trip if clearing a system fault necessitates disconnecting (a) generating unit(s).~~
- ~~• Generating unit(s) may trip by action of protective functions (such as out-of-step functions or loss-of-field functions) that operate due to an impending or actual loss of synchronism or, for asynchronous generating units, due to instability in power conversion control equipment.~~
- ~~• Generating unit(s) may trip by action of protective functions (such as out-of-step functions or loss-of-field functions) that operate due to an impending or actual loss of synchronism or, for asynchronous generating units, due to instability in power conversion control equipment.~~
- ~~• Generating unit(s) mayApplicable voltage protection may be set to trip or cease injecting current during a voltage excursion within a portion of the “no trip zone” of PRC-024 Attachment 2 for documented and communicated regulatory or equipment limitations in accordance with Requirement R3.~~

~~**M2.** Each Generator Owner shall have evidence that generator applicable voltage protective relays have been set in accordance with Requirement R2, such as dated setting sheets, voltage-time curves boundaries, calibration sheets, coordination plots, dynamic simulation studies, calculations, or other documentation.~~

Standard PRC-024-23 — ~~Generator Frequency and Voltage Protective Relay Settings for Generating Resources~~

R4.R3. Each Generator Owner shall document each known regulatory or equipment limitation⁶ that prevents an applicable generating ~~resource(s) unit~~ with ~~generator~~ frequency or voltage protective ~~relays~~ from meeting the ~~relay protection~~ setting criteria in Requirements R1 or R2, including (but not limited to) study results, experience from an actual event, or manufacturer's advice. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

4.1.3.1. The Generator Owner shall communicate the documented regulatory or equipment limitation, or the removal of a previously documented regulatory or equipment limitation, to its Planning Coordinator and Transmission Planner within 30 calendar days of any of the following:

- Identification of a regulatory or equipment limitation.
- Repair of the equipment causing the limitation that removes the limitation.
- Replacement of the equipment causing the limitation with equipment that removes the limitation.
- Creation or adjustment of an equipment limitation caused by consumption of the cumulative turbine life-time frequency excursion allowance.

M3. Each Generator Owner shall have evidence that it has documented and communicated any known regulatory or equipment limitations (excluding limitations noted in footnote 3) that resulted in an exception to Requirements R1 or R2 in accordance with Requirement R3, such as a dated email or letter that contains such documentation as study results, experience from an actual event, or manufacturer's advice.

R6.R4. Each Generator Owner shall provide its applicable ~~generator~~ protection ~~trip~~ settings associated with Requirements R1 and R2 to the Planning Coordinator or Transmission Planner that models the associated ~~unit-generating resource(s)~~ within 60 calendar days of receipt of a written request for the data and within 60 calendar days of any change to those previously requested ~~trip~~ settings unless directed by the requesting Planning Coordinator or Transmission Planner that the reporting of ~~relay protection~~ setting changes is not required. *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*

~~**M3-M1.** Each Generator Owner shall have evidence that generator frequency protective relays have been set in accordance with Requirement R1 such as dated setting sheets, calibration sheets or other documentation.~~

⁶ Excludes limitations ~~that are~~ caused by the setting capability of the ~~generator~~ frequency, ~~and~~ voltage, ~~and volts per hertz~~ protective relays ~~themselves for the generating resource(s)~~. This ~~but~~ does not exclude limitations originating in the equipment ~~that they~~ protected by the relay. ~~This also does not exclude limitations of frequency, voltage, and volts per hertz protection embedded in control systems.~~

Standard PRC-024-23 — Generator Frequency and Voltage Protective Relay Settings for Generating Resources

~~M4. M1. — Each Generator Owner shall have evidence that generator voltage protective relays have been set in accordance with Requirement R2 such as dated setting sheets, voltage time curves, calibration sheets, coordination plots, dynamic simulation studies or other documentation.~~

~~M5. M1. — Each Generator Owner shall have evidence that it has documented and communicated any known regulatory or equipment limitations (excluding limitations noted in footnote 3) that resulted in an exception to Requirements R1 or R2 in accordance with Requirement R3 such as a dated email or letter that contains such documentation as study results, experience from an actual event, or manufacturer's advice.~~

M4. Each Generator Owner shall have evidence that it communicated applicable **generator protective relay tripping protection** settings in accordance with Requirement R4, such as dated e-mails, correspondence or other evidence and copies of any requests it has received for that information.

~~E.C. Compliance~~~~4. Compliance Monitoring Process~~

~~1.1. Compliance Enforcement Authority: “Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.~~

~~The Regional Entity shall serve as the Compliance Enforcement Authority (CEA) unless the applicable entity is owned, operated, or controlled by the Regional Entity. In such cases, the ERO or a Regional Entity approved by FERC or other applicable governmental authority shall serve as the CEA.~~

~~1.3. Data Evidence Retention:~~

~~1.2. The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.~~

~~The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.~~

- ~~• The Generator Owner shall retain keep data or evidence of compliance with Requirement R1 through R4; for 3 years or until the next audit, whichever is longer.~~
- ~~• If a Generator Owner is found non-compliant, the Generator Owner or Transmission Owner shall keep information related to the non-compliance until mitigation is complete and approved for the time period specified above, whichever is longer.~~

~~The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.~~

~~1.6.1.3. Compliance Monitoring and Assessment Processes Program: As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.~~

~~Compliance Audit~~

~~Self-Certification~~

~~Standard PRC-024-23 — Generator Frequency and Voltage Protective Relay Settings for Generating Resources~~

~~Spot Checking~~

~~Compliance Investigations~~

~~Self-Reporting~~

~~Complaint~~

~~Violation Severity Levels~~

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	N/A	N/A	N/A	The Generator Owner that has failed to set its applicable frequency protection activated to trip a generating unit, failed to set its generator frequency protective relaying so that it does not trip within the criteria listed in or cease injecting current according to Requirement R1 unless there is a documented and communicated regulatory or equipment limitation per Requirement R3.
R2	N/A	N/A	N/A	The Generator Owner with voltage protective relaying activated to trip a generating unit, failed to set its applicable voltage protective relaying protection so that it does not trip as a result of a voltage excursion at the point of interconnection, caused by an event external

~~Standard PRC-024-23 — Generator Frequency and Voltage Protection Relay Settings for Generating Resources~~

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				to the plant per the criteria specified in or cease injecting current according to Requirement R2 unless there is a documented and communicated regulatory or equipment limitation per Requirement R3.
R3	The Generator Owner documented the known non-protection system equipment limitation that prevented it from meeting the criteria in Requirement R1 or R2 and communicated the documented limitation to its Planning Coordinator and Transmission Planner more than 30 calendar days but less than or equal to 60 calendar days of identifying the limitation.	The Generator Owner documented the known non-protection system equipment limitation that prevented it from meeting the criteria in Requirement R1 or R2 and communicated the documented limitation to its Planning Coordinator and Transmission Planner more than 60 calendar days but less than or equal to 90 calendar days of identifying the limitation.	The Generator Owner documented the known non-protection system equipment limitation that prevented it from meeting the criteria in Requirement R1 or R2 and communicated the documented limitation to its Planning Coordinator and Transmission Planner more than 90 calendar days but less than or equal to 120 calendar days of identifying the limitation.	The Generator Owner failed to document any known non-protection system equipment limitation that prevented it from meeting the criteria in Requirement R1 or R2. OR The Generator Owner failed to communicate the documented limitation to its Planning Coordinator and Transmission Planner within 120 calendar days of identifying the limitation.

~~Standard PRC-024-23 — Generator Frequency and Voltage Protection Relay Settings for Generating Resources~~

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R4.	<p>The Generator Owner provided its generator protection trip settings more than 60 calendar days but less than or equal to 90 calendar days of any change to those trip settings.</p> <p>OR</p> <p>The Generator Owner provided trip protection settings more than 60 calendar days but less than or equal to 90 calendar days of a written request.</p>	<p>The Generator Owner provided its generator protection trip settings more than 90 calendar days but less than or equal to 120 calendar days of any change to those trip settings.</p> <p>OR</p> <p>The Generator Owner provided protection trip settings more than 90 calendar days but less than or equal to 120 calendar days of a written request.</p>	<p>The Generator Owner provided its generator protection trip settings more than 120 calendar days but less than or equal to 150 calendar days of any change to those trip settings.</p> <p>OR</p> <p>The Generator Owner provided protection trip settings more than 120 calendar days but less than or equal to 150 calendar days of a written request.</p>	<p>The Generator Owner failed to provide its generator protection trip settings within 150 calendar days of any change to those trip settings.</p> <p>OR</p> <p>The Generator Owner failed to provide protection trip settings within 150 calendar days of a written request.</p>

~~F.D. Regional Variances~~~~None~~~~D.A. Variance for the Quebec Interconnection~~~~This Variance extends the applicability of Requirements R1, R3, and R4 to Transmission Owners in the Quebec Interconnection that own a BES GSU or MPT and apply protection listed in Section 4.2.1, Facilities. This Variance also replaces Requirement R2 of the continent-wide standard in its entirety and adds a new requirement, Requirement D.A.5., applicable to Planning Coordinators in the Quebec Interconnection.~~~~In Requirements R1, R3, and R4, all references to “Generator Owner” are replaced with “Generator Owner and Transmission Owner.”~~~~This Variance replaces continent-wide Requirement R2 in its entirety with the following:~~~~**D.A.2.** Each Generator Owner and Transmission Owner shall set its applicable voltage protection⁵ in accordance with PRC-024 Attachment 2a, such that the applicable protection does not cause the generating resource to trip or cease injecting current during a voltage excursion within the “no trip zone” at the high side of the GSU or MPT, subject to the following exceptions: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*~~

- ~~• For newly designated strategic power plants, applicable protections must comply with the high voltage durations for such plants within 48 calendar months of the notification made pursuant to Requirement D.A.5. During this transition period, voltage protections must at least comply with the high voltage durations for “all power plants”.~~
- ~~• The generating resource(s) are permitted to be set to trip or to cease injecting current during a voltage excursion bounded by the “no trip zone” of PRC-024 Attachment 2a for documented and communicated regulatory or equipment limitations in accordance with Requirement R3.~~
- ~~• If the Transmission Planner allows less stringent voltage protection settings than those required to meet PRC-024 Attachment 2a, then the Generator Owner or Transmission Owner may set its protection within the voltage recovery characteristics of a location-specific Transmission Planner’s study.~~
- ~~• Inverter-based resources voltage protection settings may be set to cease injecting current momentarily during a voltage excursion at the~~

high side of the MPT, bounded by the “no trip zone” of PRC-024 Attachment 2a, under the following conditions:

- o After a minimum delay of 0.022 s, when the positive-sequence voltage exceeds 1.25 per unit (p.u.) Normal operation must resume once the voltage drops back below 1.25 p.u at the high side of the MPT.
- o After a minimum delay of 0.022 s, when the phase-to-ground root mean square (RMS) voltages exceeds 1.4 p.u., as measured at generator terminals, on one or multiple phases. Normal operation must resume once the positive-sequence voltage drops back below the 1.25 p.u. at the high side of the MPT.

M.D.A.2. Each Generator Owner and Transmission Owner shall have evidence that applicable voltage protection has been set in accordance with Requirement R2, such as dated setting sheets, voltage-time boundaries, calibration sheets, coordination plots, dynamic simulation studies, calculations, or other documentation.

This Variance adds the following Requirement:

D.A.5 Each Planning Coordinator shall designate, at least once every five calendar years, the strategic power plants that must comply with Attachment 2a and notify, within 30 calendar days of its designation, each Generator Owner or Transmission Owner that owns facilities⁷ in the strategic power plants. *[Violation Risk Factor: Medium] [Time Horizon: Long-term planning]*

M.D.A.5 Each Planning Coordinator shall have evidence that it designated, at least once every five calendar years, strategic power plants in accordance with Requirement D.A.5, Part 5 and shall have dated evidence that each Generator Owner or Transmission Owner has been notified in accordance with Requirement D.A.5, part 5.2. Evidence may include, but is not limited to: letters, emails, electronic files, or hard copy records demonstrating transmittal of information.

⁷ Facilities in the strategic power plants include facilities from the generator up to and including the MPT or GSU.

Violation Severity Levels

This Variance adds a VSL for D.A.5 and modifies the VSL for R2 as follows:

<u>R #</u>	<u>Violation Severity Levels</u>			
	<u>Lower VSL</u>	<u>Moderate VSL</u>	<u>High VSL</u>	<u>Severe VSL</u>
<u>D.A.2.</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<p><u>The Generator Owner or Transmission Owner failed to set its applicable voltage protection so that it does not trip or cease injecting current in accordance with Requirement D.A.2.</u></p> <p><u>OR</u></p> <p><u>The Generator Owner or Transmission Owner set its applicable voltage protection in accordance with Requirement D.A.2 but, for strategic power plants, failed to do so within 48 months of notification.</u></p>
<u>D.A.5.</u>	<u>N/A</u>	<u>The Planning Coordinator designated strategic power plants at least once every five calendar years but notified each Generator Owner or Transmission Owner that owns</u>	<u>The Planning Coordinator designated strategic power plants at least once every five calendar years but notified each Generator Owner or Transmission Owner that owns</u>	<u>The Planning Coordinator failed to designate, at least once every five years, the strategic power plants that must comply with Attachment 2a.</u>

~~Standard PRC-024-23~~ — ~~Generator~~ Frequency and Voltage Protective ~~on Relay~~ Settings for Generating Resources

<u>R.4</u>	<u>Violation Severity Levels</u>			
	<u>Lower VSL</u>	<u>Moderate VSL</u>	<u>High VSL</u>	<u>Severe VSL</u>
		<u>facilities in the strategic power plants between 31 days and 45 days after its designation.</u>	<u>facilities in the strategic power plants between 46 days and 60 days after its designation.</u>	<u>OR</u> <u>The Planning Coordinator failed to notify, each Generator Owner or Transmission Owner that owns facilities in the strategic power plants or notified them more than 60 days after the its designation.</u>

~~Standard PRC-024-23~~ — ~~Generator~~ Frequency and Voltage Protective ~~Relay~~ Settings for Generating Resources

~~G-E.~~ Associated Documents

~~None~~ Implementation Plan

Standard PRC-024-23 — Generator Frequency and Voltage Protective Relay Settings for Generating ResourcesVersion History

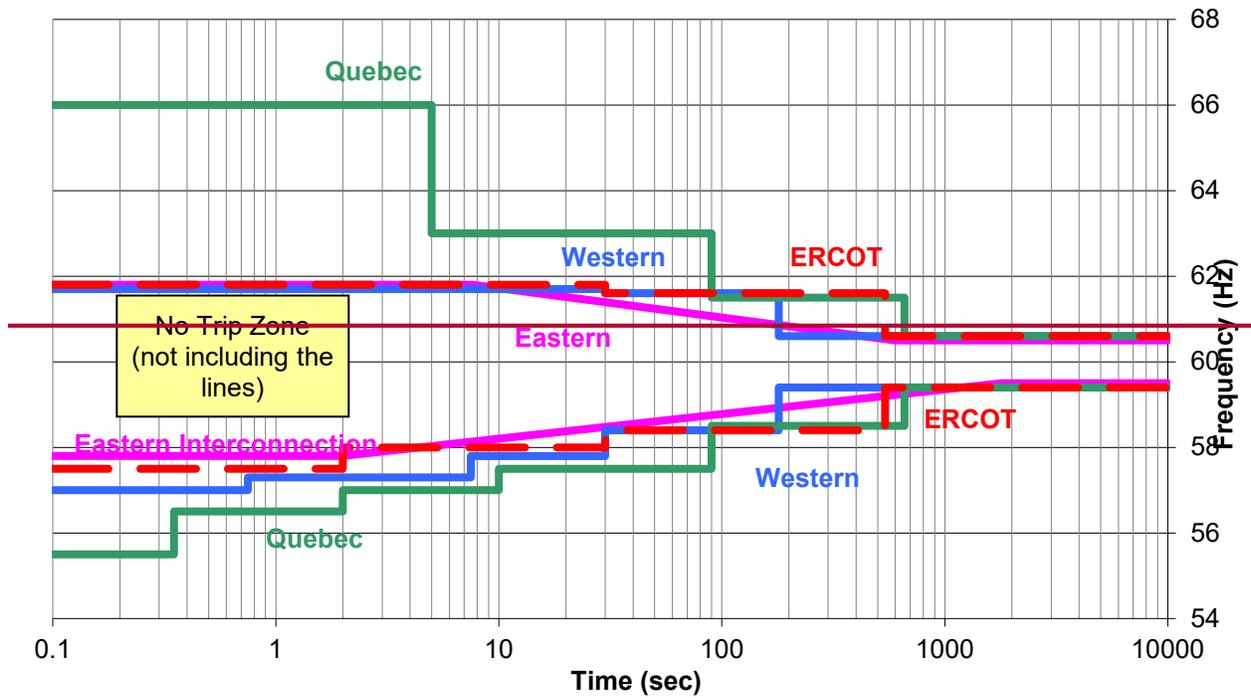
<u>Version</u>	<u>Date</u>	<u>Action</u>	<u>Change Tracking</u>
<u>1</u>	<u>May 9, 2013</u>	<u>Adopted by the NERC Board of Trustees</u>	
<u>1</u>	<u>March 20, 2014</u>	<u>FERC Order issued approving PRC-024-1. (Order becomes effective on 7/1/16.)</u>	
<u>2</u>	<u>February 12, 2015</u>	<u>Adopted by the NERC Board of Trustees</u>	<u>Standard revised in Project 2014-01: Applicability revised to clarify application of requirements to BES dispersed power producing resources</u>
<u>2</u>	<u>May 29, 2015</u>	<u>FERC Letter Order in Docket No. RD15-3-000 approving PRC-024-2</u>	<u>Modifications to adjust the applicability to owners of dispersed generation resources.</u>
<u>3</u>	<u>TBD</u>	<u>Adopted by the NERC Board of Trustees</u>	<u>Standard revised in Project 2018-04</u>

~~H. References~~

- ~~1. “The Technical Justification for the New WECC Voltage Ride-Through (VRT) Standard, A White Paper Developed by the Wind Generation Task Force (WGTF),” dated June 13, 2007, a guideline approved by WECC Technical Studies Subcommittee.~~

~~PRC-024~~ — Attachment 1

OFF NOMINAL FREQUENCY CAPABILITY CURVE



(Frequency No Trip Boundaries by Interconnection⁸)

⁸ The figures do not visually represent the “no trip zone” boundaries before 0.1 seconds and after 10,000 seconds. The Frequency Boundary Data Points Table defines the entirety of the “no trip zone” boundaries.

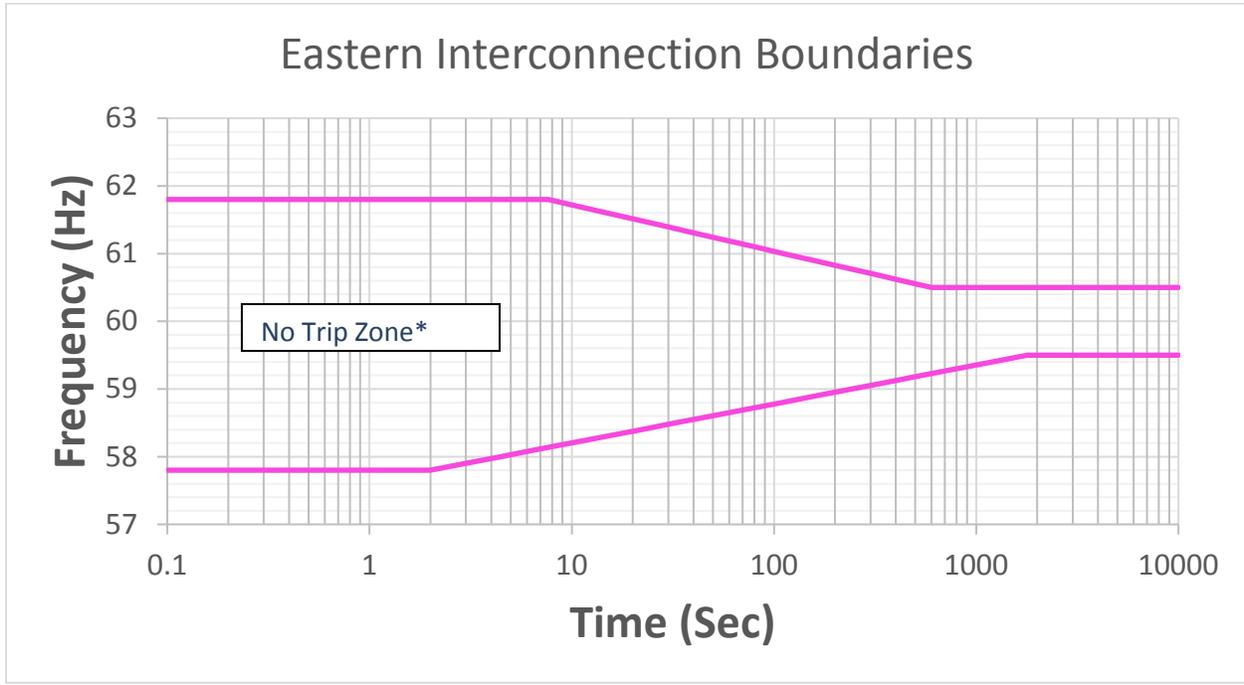


Figure 1

**** The area outside the "No Trip Zone" is not a "Must Trip Zone."***

~~Curve-Frequency Boundary~~ Data Points:

~~- Eastern Interconnection~~

High Frequency Duration		Low Frequency Duration	
Frequency (Hz)	<u>Minimum</u> Time (Sec)	Frequency (Hz)	<u>Minimum</u> Time (sec)
≥61.8	Instantaneous ⁹ trip	≤57.8	Instantaneous ⁹ trip
≥60.5	$10^{(90.935-1.45713*f)}$	≤59.5	$10^{(1.7373*f-100.116)}$
<60.5	Continuous operation	> 59.5	Continuous operation

Table 1

⁹ Frequency is calculated over a window of time. While the frequency boundaries include the option to trip instantaneously for frequencies outside the specified range, this calculation should occur over a time window. Typical window/filtering lengths are three to six cycles (50 – 100 milliseconds). Instantaneous trip settings based on instantaneously calculated frequency measurement is not permissible.

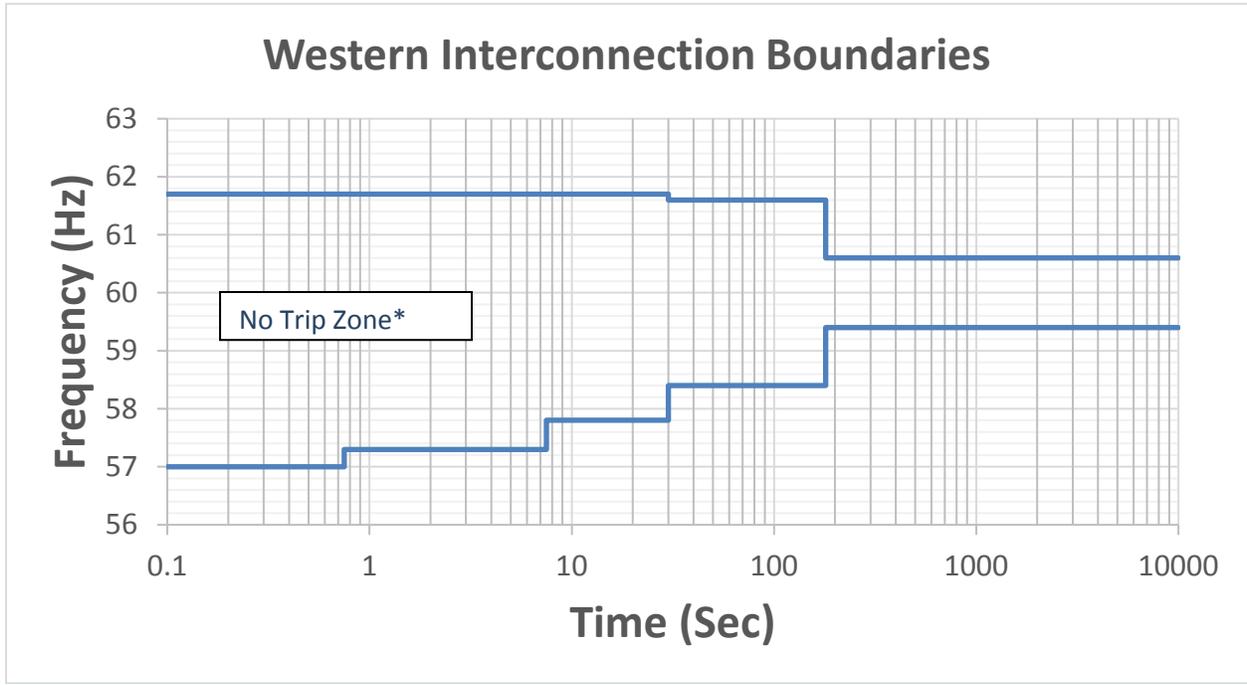


Figure 2

*** The area outside the "No Trip Zone" is not a "Must Trip Zone."**

Frequency Boundary Data Points –Western Interconnection

High Frequency Duration		Low Frequency Duration	
Frequency (Hz)	<u>Minimum</u> Time (Sec)	Frequency (Hz)	<u>Minimum</u> Time (sec)
≥61.7	Instantaneous ⁹ trip	≤57.0	Instantaneous ⁹ trip
≥61.6	30	≤57.3	0.75
≥60.6	180	≤57.8	7.5
<60.6	Continuous operation	≤58.4	30
		≤59.4	180
		>59.4	Continuous operation

Table 2

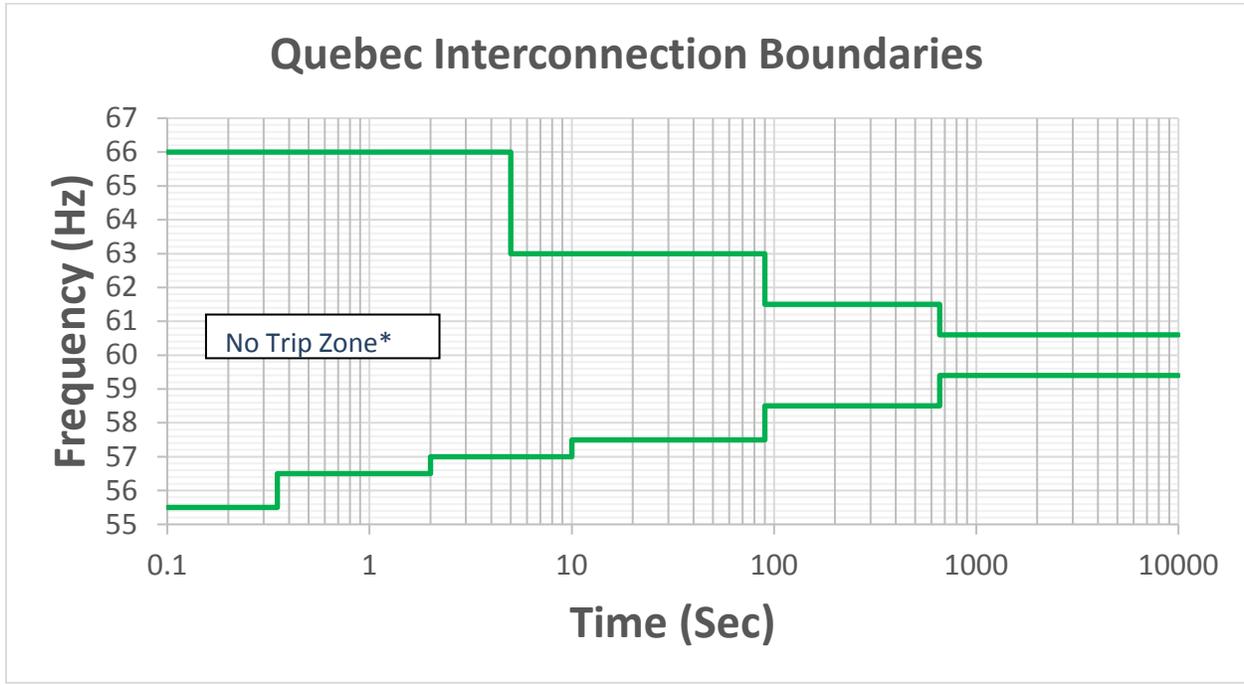


Figure 3

** The area outside the "No Trip Zone" is not a "Must Trip Zone."*

Frequency Boundary Data Points – Quebec Interconnection

High Frequency Duration		Low Frequency Duration	
Frequency (Hz)	<u>Minimum</u> Time (Sec)	Frequency (Hz)	<u>Minimum</u> Time (Sec)
>66.0	Instantaneous ⁹ trip	<55.5	Instantaneous ⁹ trip
≥63.0	5	≤56.5	0.35
≥61.5	90	≤57.0	2
≥60.6	660	≤57.5	10
<60.6	Continuous operation	≤58.5	90
		≤59.4	660
		>59.4	Continuous operation

Table 3

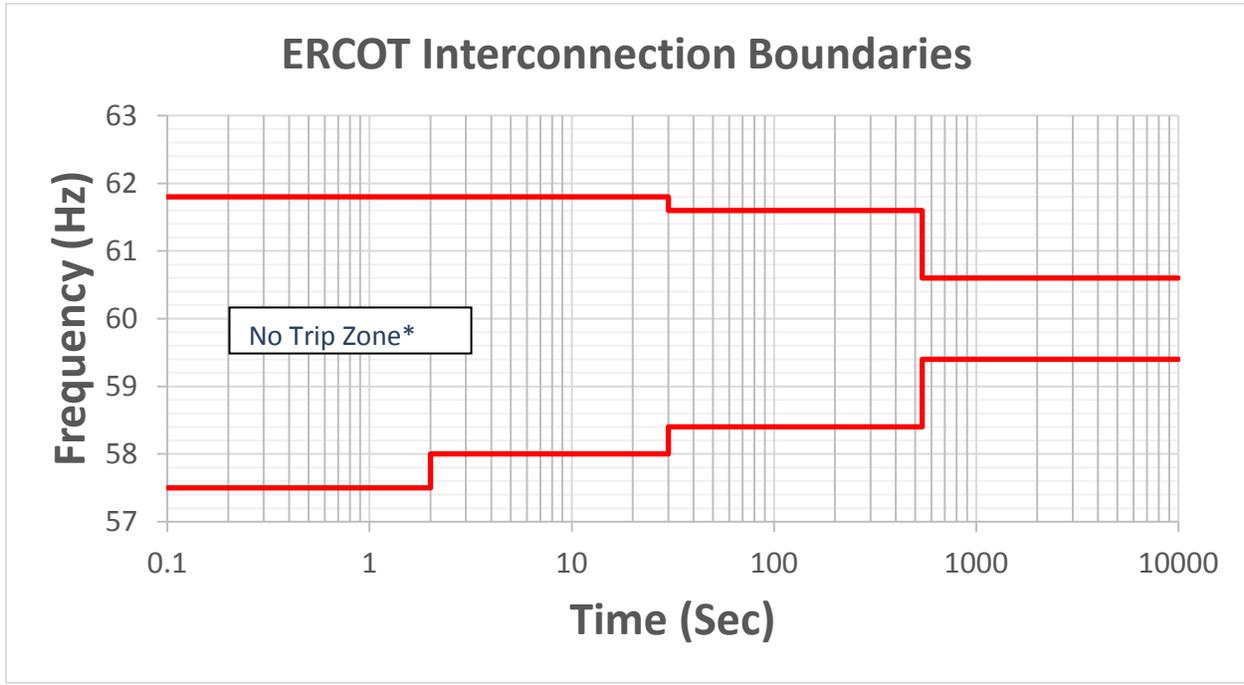


Figure 4

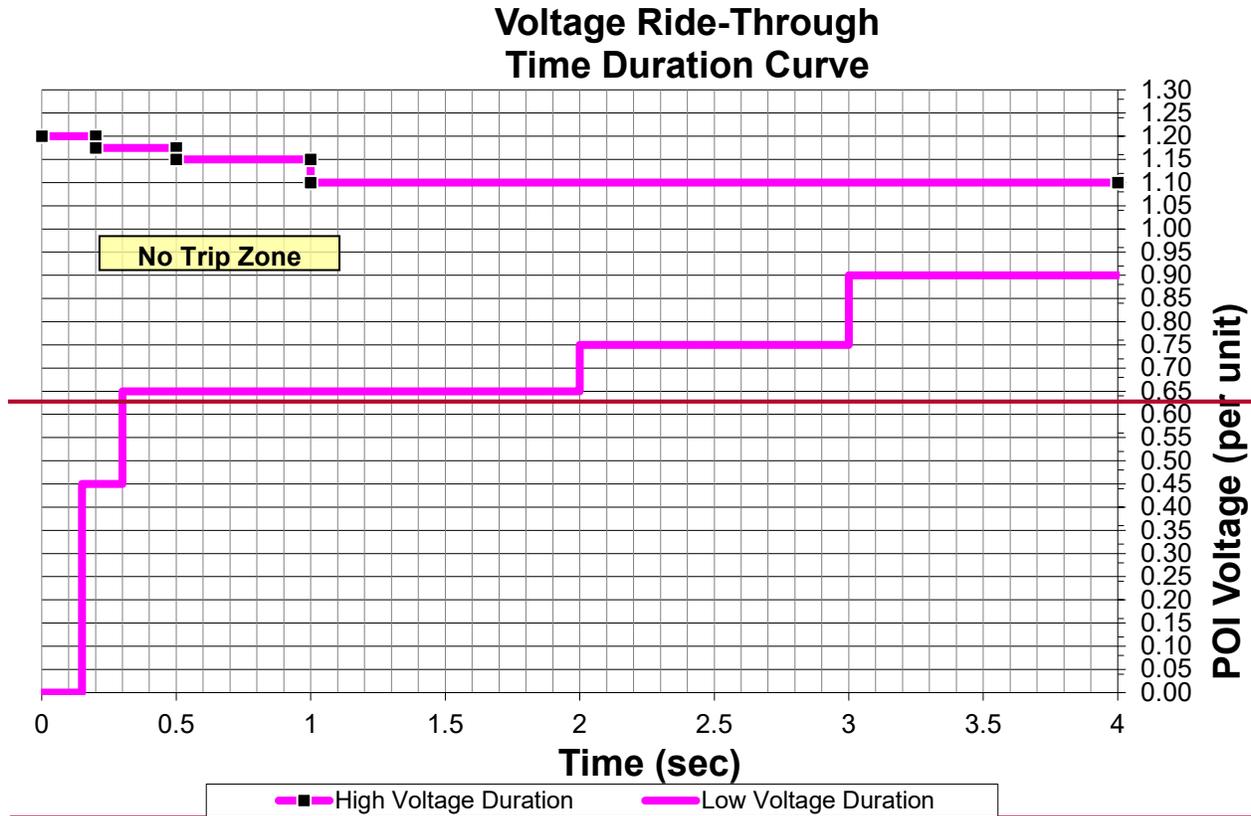
** The area outside the "No Trip Zone" is not a "Must Trip Zone."*

Frequency Boundary Data Points – ERCOT Interconnection

High Frequency Duration		Low Frequency Duration	
Frequency (Hz)	<u>Minimum</u> Time (Sec)	Frequency (Hz)	<u>Minimum</u> Time (sec)
≥61.8	Instantaneous ⁹ trip	≤57.5	Instantaneous ⁹ trip
≥61.6	30	≤58.0	2
≥60.6	540	≤58.4	30
<60.6	Continuous operation	≤59.4	540
		>59.4	Continuous operation

Table 4

~~PRC 024 — Attachment 2~~



~~Ride Through Duration:~~

~~PRC-024 — Attachment 2~~
~~(Voltage No-Trip Boundaries – Eastern, Western, and ERCOT Interconnections)~~

Standard PRC-024-23 — Generator Frequency and Voltage Protective Relay Settings for Generating Resources

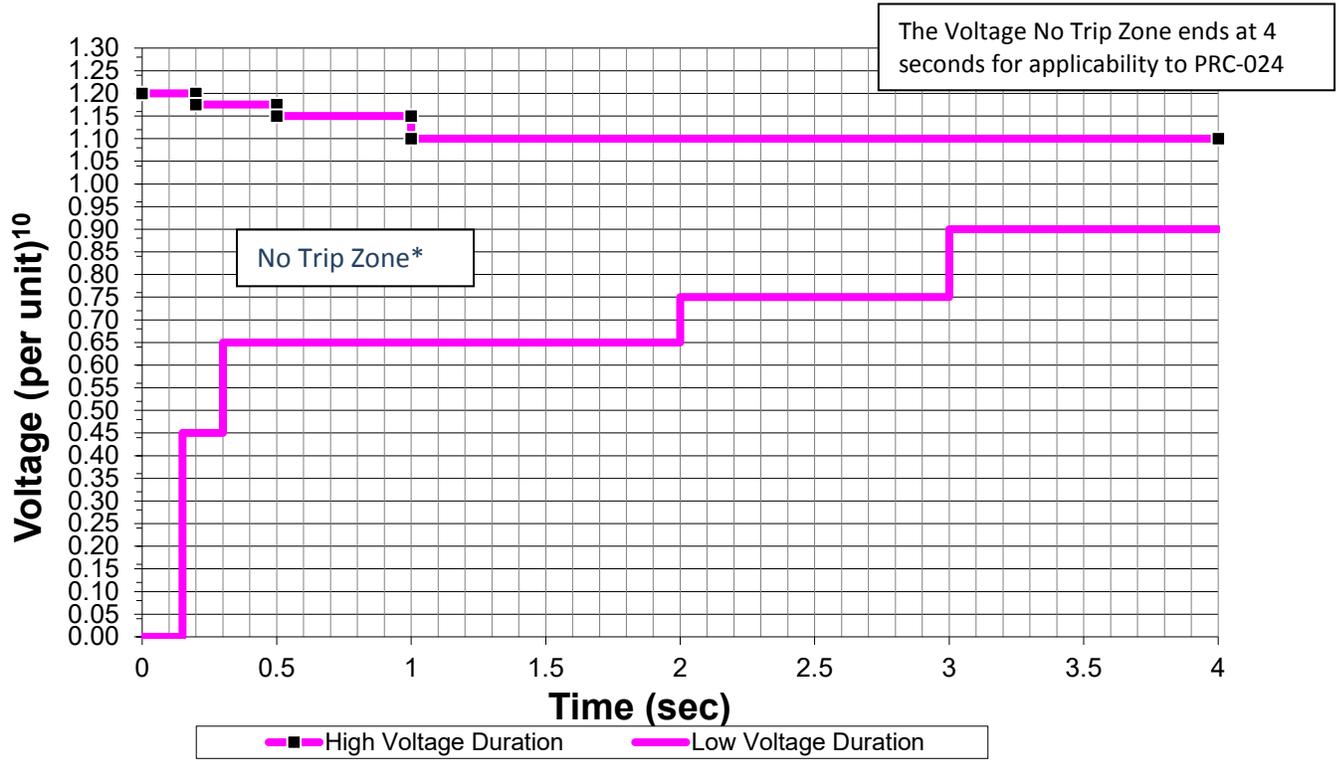


Figure 1

** The area outside the "No Trip Zone" is not a "Must Trip Zone."*

Voltage Boundary Data Points

High Voltage Duration		Low Voltage Duration	
Voltage (pu)	Minimum Time (sec)	Voltage (pu)	Minimum Time (sec)
<u>≥1.200</u>	<u>0.00</u>	<u><0.45</u>	<u>0.15</u>
<u>≥1.175</u>	<u>0.20</u>	<u><0.65</u>	<u>0.30</u>
<u>≥1.15</u>	<u>0.50</u>	<u><0.75</u>	<u>2.00</u>
<u>≥1.10</u>	<u>1.00</u>	<u><0.90</u>	<u>3.00</u>
<u><1.10</u>	<u>4.00</u>	<u>≥ 0.90</u>	<u>4.00</u>

Table 1

¹⁰Voltage at the high-side of the GSU or MPT.

Attachment 2: Voltage ~~Ride-Through Curve~~ Boundary Clarifications — Eastern, Western, and ERCOT InterconnectionsCurveBoundary Details:

- ~~1. The per unit voltage base for these curves is the nominal operating voltage Unless otherwise specified by the Transmission Planner in the analysis of the reliability of the Interconnected Transmission Systems at the point of interconnection to the Bulk Electric System (BES).~~
- ~~2.1. The curves depicted were derived based on three phase, the per unit voltage base for these boundaries is the nominal transmission system zone 1 faults with Normal Clearing not exceeding 9 cycles. The curves apply to voltage excursions regardless of the type of initiating event. voltage (e.g., 100 kV, 115 kV, 138 kV, 161 kV, 230 kV, 345 kV, 400 kV, 500 kV, 765 kV, etc.).~~
- ~~3. The envelope within the curves represents the cumulative voltage duration at the point of interconnection with the BES. For example, if the voltage first exceeds 1.15 pu at 0.3 seconds after a fault, does not exceed 1.2 pu voltage, and returns below 1.15 pu at 0.4 seconds, then the cumulative time the voltage is above 1.15 pu voltage is 0.1 seconds and is within the no trip zone of the curve.~~
- ~~2. The curves depicted~~The values in the table represent the minimum time durations allowed for specified voltage excursion thresholds.
- ~~4.3. When evaluating volts per hertz protection, either assume a system frequency is of 60 Hertz. When evaluating Volts/Hertz protection, you may adjust or the magnitude of the high voltage curve boundary can be adjusted in proportion to deviations of frequency below 60 Hz. Hertz.~~
- ~~5.4. Voltages in the curve boundaries assume minimum RMS fundamental frequency phase-to-ground or phase-to-phase voltage for the low voltage duration curve and the greater of maximum RMS or crest phase to phase voltage for the high voltage duration curve per unit voltage.~~
- ~~5. For applicability to PRC-024, the “no trip zone” ends at 4 seconds.~~

Evaluating Protective Relay Protection Settings:

~~Use either~~The voltage values in the Attachment 2 voltage boundaries are voltages at the high side of the GSU/MPT. For generating resources with multiple stages of step up to reach interconnecting voltage, this is the high side of the transformer with a low side below 100kV and a high side 100kV or above. When evaluating protection settings, consider the voltage differences between where the protection is measuring voltage and the high side of the GSU/MPT. A steady state calculation or dynamic simulation may be used.

If using a steady state calculation or dynamic simulation, use the following assumptions or conditions when evaluating protection settings:

~~Standard PRC-024-23 — Generator Frequency and Voltage Protective Relay Settings for Generating Resources~~

- a. ~~The most probable real and reactive loading conditions that are believed to be the most probable for the unit under study to evaluate voltage protection relay setting calculations on the static case for steady state initial conditions:-~~
 - b. ~~All of the units connected to the same transformer are online and operating.~~
 - c. ~~All of the units are at full nameplate real power output.~~
 - d. ~~Power factor is 0.95 lagging (i.e. supplying reactive power to the system) as measured at the generator terminals.~~
 - e. ~~The automatic voltage regulator is in automatic voltage control mode.~~
- b. ~~Evaluate voltage protection relay settings assuming that additional~~All installed generating plant reactive support ~~equipment (such as (e.g., static VAR~~VAR compensators, synchronous condensers, ~~or~~ capacitors) equipment is available and operating normally.
- c. Account for the actual tap settings of transformers between the generator terminals and the high side of the GSU/MPT.
- d. For dynamic simulations, the automatic voltage regulator is in automatic voltage control mode with associated limiters in service.

PRC-024— Attachment 2a
(Voltage No-Trip Boundaries – Quebec Interconnection)

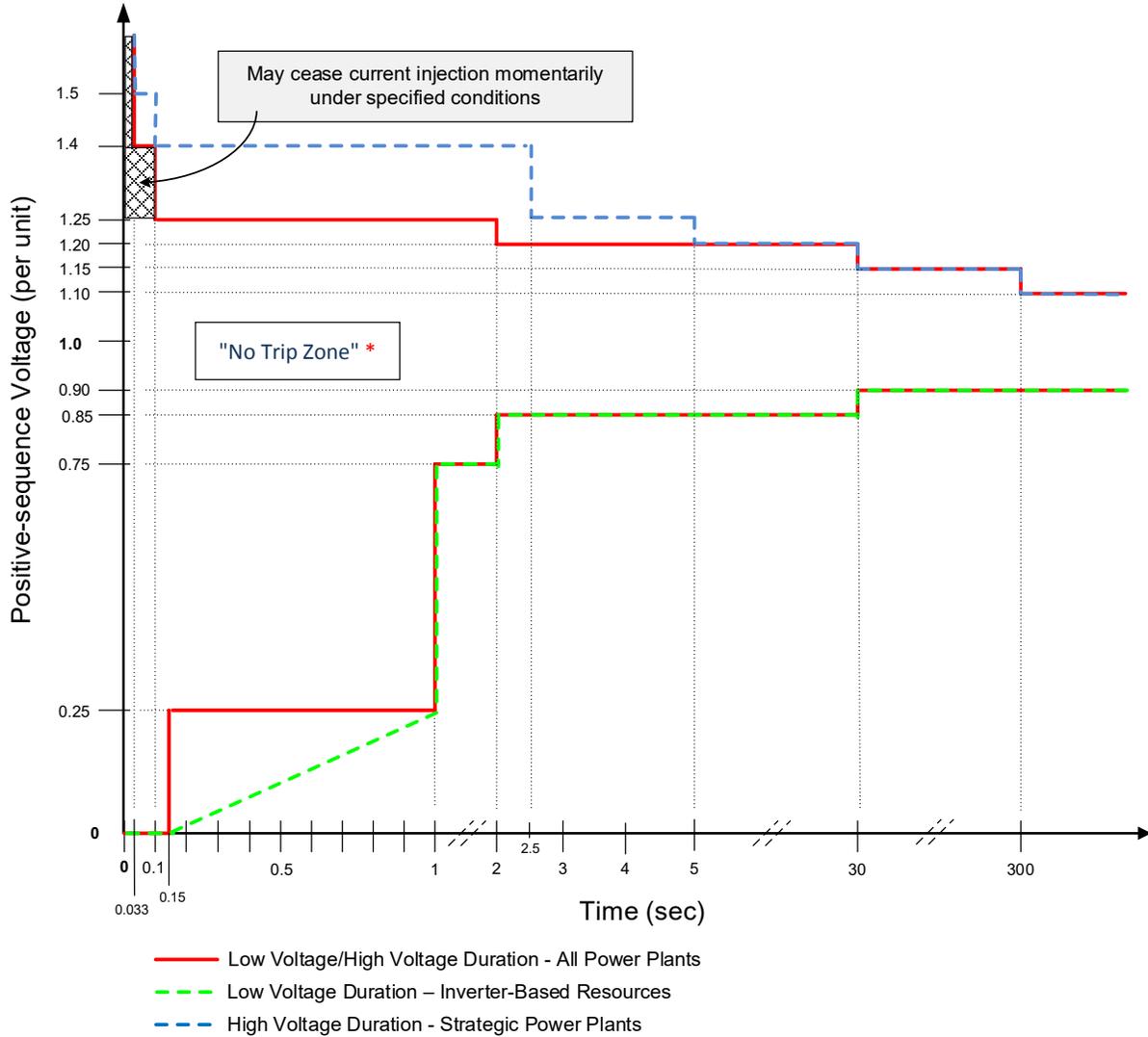


Figure 1

*** The area outside the "No Trip Zone" is not a "Must Trip Zone."**

~~Standard Standard PRC-024-23 — Generator Frequency and Voltage Protective Relay Settings for Generating Resources~~ ~~Generator Frequency and Voltage Protective Relay Settings~~

Voltage Boundary Data Points – Quebec Interconnection

<u>High Voltage Duration for all Power Plants</u>		<u>High Voltage Duration for strategic Power Plants</u>	
<u>Voltage (pu)</u>	<u>Minimum Time (sec)</u>	<u>Voltage (pu)</u>	<u>Minimum Time (sec)</u>
<u>---</u>	<u>---</u>	<u>>1.50</u>	<u>0.033</u>
<u>>1.40</u>	<u>0.033</u>	<u>>1.40</u>	<u>0.10</u>
<u>>1.25</u>	<u>0.10</u>	<u>>1.25</u>	<u>2.50</u>
<u>>1.20</u>	<u>2.00</u>	<u>>1.20</u>	<u>5.00</u>
<u>>1.15</u>	<u>30</u>	<u>>1.15</u>	<u>30</u>
<u>>1.10</u>	<u>300</u>	<u>>1.10</u>	<u>300</u>
<u>≤1.10</u>	<u>continuous</u>	<u>≤1.10</u>	<u>continuous</u>

Table 1

Voltage Boundary Data Points – Quebec Interconnection

<u>Low Voltage Duration for all Power Plants</u>		<u>Low Voltage Duration for Inverter-Based Resources</u>	
<u>Voltage (pu)</u>	<u>Minimum Time (sec)</u>	<u>Voltage (pu)</u>	<u>Minimum Time (sec)</u>
<u><0.25</u>	<u>0.15</u>	<u><0.25</u>	<u>$3.4 * V(\text{pu}) + 0.15$</u>
<u><0.75</u>	<u>1.00</u>	<u><0.75</u>	<u>1.00</u>
<u><0.85</u>	<u>2.00</u>	<u><0.85</u>	<u>2.00</u>
<u><0.90</u>	<u>30</u>	<u><0.90</u>	<u>30</u>
<u>≥0.90</u>	<u>continuous</u>	<u>≥0.90</u>	<u>continuous</u>

Table 2

Attachment 2a: Voltage Boundary Clarifications – Quebec Interconnection

Boundary Details:

1. The per unit voltage base for these boundaries is the nominal operating voltage (e.g., 120 kV, 161 kV, 230 kV, 315 kV, 735 kV, etc.).
2. The values in the table represent the minimum time durations allowed for specified voltage excursion thresholds.
3. When evaluating volts per hertz protection, either assume a system frequency of 60 Hertz or the magnitude of the high voltage boundary can be adjusted in proportion to deviations of frequency below 60 Hertz.
4. Voltages in the Quebec Interconnection boundaries assume positive-sequence values.

Evaluating Protection Settings:

The voltage values in the Attachment 2a voltage boundaries are voltages at the high side of the GSU/MPT. For generating resources with multiple stages of step up to reach interconnecting voltage, this is the high side of the transformer that connects to the interconnecting voltage. When evaluating protection settings, consider the voltage differences between where the protection is measuring voltage and the high side of the GSU/MPT. A steady state calculation or dynamic simulation may be used.

If using a steady state calculation or dynamic simulation, use the following conditions when evaluating protection settings:

- a. The most probable real and reactive loading conditions for the unit under study.
- b. All installed generating plant reactive support (e.g., static VAR compensators, synchronous condensers, capacitors) equipment is available and operating normally.
- c. Account for the actual tap settings of transformers between the generator terminals and the high side of the GSU/MPT.
- d. For dynamic simulations, the automatic voltage regulator is in automatic voltage control mode with associated limiters in service.

~~During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.~~

Rationale for Footnotes 2 and 4

~~Standard Standard-PRC-024-23 — Generator Frequency and Voltage Protective Relay Settings for
Generating Resources Generator Frequency and Voltage Protective Relay Settings~~

~~The SDT has determined it is appropriate to require that protective relay settings applied on both the individual generating units and aggregating equipment (including any non-Bulk Electric System collection system equipment) are set respecting the “no-trip zone” referenced in the requirements to maintain reliability of the BES. If any of the protective relay settings applied on these elements of the facility were to be excluded from this standard, the potential would exist for portions of or the entire generating capacity of the dispersed power producing facility to be lost during a voltage or frequency excursion.~~

Standard TOP-003-~~3-4~~ — Operational Reliability Data

A. Introduction

1. **Title: Operational Reliability Data**
2. **Number: TOP-003-~~43~~**
3. **Purpose:** To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.
4. **Applicability:**
 - 4.1. Transmission Operator
 - 4.2. Balancing Authority
 - 4.3. Generator Owner
 - 4.4. Generator Operator
 - ~~4.5. Load Serving Entity~~
 - ~~4.6.4.5. Transmission Owner~~
 - ~~4.7.4.6. Distribution Provider~~
5. **Effective Date:**
~~See Implementation Plan.~~
- ~~6. Background:~~
~~See Project 2014-03 project page.~~

B. Requirements and Measures

- R1. Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include, but not be limited to: *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
 - 1.1. A list of data and information needed by the Transmission Operator to support its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments including non-BES data and external network data as deemed necessary by the Transmission Operator.
 - 1.2. Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability.
 - 1.3. A periodicity for providing data.
 - 1.4. The deadline by which the respondent is to provide the indicated data.
- M1. Each Transmission Operator shall make available its dated, current, in force documented specification for data.

Standard TOP-003-3.4 — Operational Reliability Data

- R2.** Each Balancing Authority shall maintain a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. The data specification shall include, but not be limited to: *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
- 2.1.** A list of data and information needed by the Balancing Authority to support its analysis functions and Real-time monitoring.
 - 2.2.** Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability.
 - 2.3.** A periodicity for providing data.
 - 2.4.** The deadline by which the respondent is to provide the indicated data.
- M2.** Each Balancing Authority shall make available its dated, current, in force documented specification for data.
- R3.** Each Transmission Operator shall distribute its data specification to entities that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessment. *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
- M3.** Each Transmission Operator shall make available evidence that it has distributed its data specification to entities that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. Such evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, date and contents, or e-mail records.
- R4.** Each Balancing Authority shall distribute its data specification to entities that have data required by the Balancing Authority's analysis functions and Real-time monitoring. *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
- M4.** Each Balancing Authority shall make available evidence that it has distributed its data specification to entities that have data required by the Balancing Authority's analysis functions and Real-time monitoring. Such evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, or e-mail records.
- R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, ~~Load-Serving Entity~~, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications using: *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*
- 5.1.** A mutually agreeable format
 - 5.2.** A mutually agreeable process for resolving data conflicts
 - 5.3.** A mutually agreeable security protocol

Standard TOP-003-3.4 — Operational Reliability Data

- M5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, ~~Load-Serving Entity~~, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall make available evidence that it has satisfied the obligations of the documented specifications. Such evidence could include, but is not limited to, electronic or hard copies of data transmittals or attestations of receiving entities.

~~C. Compliance~~**1. ~~Compliance Monitoring Process~~****1.1. ~~Compliance Monitoring Process~~**

~~As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.~~

1.2. ~~Compliance Monitoring and Assessment Processes~~

~~As defined in the NERC Rules of Procedure, “Compliance Monitoring and Assessment Processes” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated reliability standard.~~

1.3. ~~Data Retention~~

~~The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.~~

~~Each responsible entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:~~

~~Each Transmission Operator shall retain its dated, current, in force, documented specification for the data necessary for it to perform its Operational Planning Analyses, Real time monitoring, and Real time Assessments in accordance with Requirement R1 and Measurement M1 as well as any documents in force since the last compliance audit.~~

~~Each Balancing Authority shall retain its dated, current, in force, documented specification for the data necessary for it to perform its analysis functions and Real time monitoring in accordance with Requirement R2 and Measurement M2 as well as any documents in force since the last compliance audit.~~

~~Each Transmission Operator shall retain evidence for three calendar years that it has distributed its data specification to entities that have data required by the~~

Standard TOP-003-3.4 — Operational Reliability Data

~~Transmission Operator's Operational Planning Analyses, Real time monitoring, and Real time Assessments in accordance with Requirement R3 and Measurement M3.~~

~~Each Balancing Authority shall retain evidence for three calendar years that it has distributed its data specification to entities that have data required by the Balancing Authority's analysis functions and Real time monitoring in accordance with Requirement R4 and Measurement M4.~~

~~Each Balancing Authority, Generator Owner, Generator Operator, Load Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall retain evidence for the most recent 90 calendar days that it has satisfied the obligations of the documented specifications in accordance with Requirement R5 and Measurement M5.~~

~~If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or the time period specified above, whichever is longer.~~

~~The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.~~

1.4. Additional Compliance Information

~~None.~~

~~Standard TOP-003-3.4~~ — Operational Reliability Data~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Operations Planning	Low	The Transmission Operator did not include one of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real time monitoring, and Real-time Assessments.	The Transmission Operator did not include two of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real time monitoring, and Real-time Assessments.	The Transmission Operator did not include three of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real time monitoring, and Real-time Assessments.	The Transmission Operator did not include four of the parts (Part 1.1 through Part 1.4) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real time monitoring, and Real-time Assessments. OR, The Transmission Operator did not have a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real time monitoring, and Real-time Assessments.

~~Standard TOP-003-3.4 — Operational Reliability Data~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R2	Operations Planning	Low	The Balancing Authority did not include one of the parts (Part 2.1 through Part 2.4) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.	The Balancing Authority did not include two of the parts (Part 2.1 through Part 2.4) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.	The Balancing Authority did not include three of the parts (Part 2.1 through Part 2.4) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.	The Balancing Authority did not include four of the parts (Part 2.1 through Part 2.4) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. OR, The Balancing Authority did not have a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.
For the Requirement R3 and R4 VSLs only, the intent of the SDT is to start with the Severe VSL first and then to work your way to the left until you find the situation that fits. In this manner, the VSL will not be discriminatory by size of entity. If a small entity has just one affected reliability entity to inform, the intent is that that situation would be a Severe violation.						
R3	Operations Planning	Low	The Transmission Operator did not distribute its data	The Transmission Operator did not distribute its data	The Transmission Operator did not distribute its data	The Transmission Operator did not distribute its data

~~Standard TOP-003-3-4~~ — Operational Reliability Data

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			specification to one entity, or 5% or less of the entities, whichever is greater, that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	specification to two entities, or more than 5% and less than or equal to 10% of the reliability entities, whichever is greater, that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	specification to three entities, or more than 10% and less than or equal to 15% of the reliability entities, whichever is greater, that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	specification to four or more entities, or more than 15% of the entities that have data required by the Transmission Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.
R4	Operations Planning	Low	The Balancing Authority did not distribute its data specification to one entity, or 5% or less of the entities, whichever is greater, that have data required by the Balancing Authority's analysis functions and Real-time monitoring.	The Balancing Authority did not distribute its data specification to two entities, or more than 5% and less than or equal to 10% of the entities, whichever is greater, that have data required by the Balancing Authority's analysis functions and Real-time monitoring.	The Balancing Authority did not distribute its data specification to three entities, or more than 10% and less than or equal to 15% of the entities, whichever is greater, that have data required by the Balancing Authority's analysis functions and Real-time monitoring.	The Balancing Authority did not distribute its data specification to four or more entities, or more than 15% of the entities that have data required by the Balancing Authority's analysis functions and Real-time monitoring.

Standard TOP-003-3-4 — Operational Reliability Data

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R5	Operations Planning, Same-Day Operations, Real-time Operations	Medium	The responsible entity receiving a data specification in Requirement R3 or R4 satisfied the obligations in the data specification but did not meet one of the criteria shown in Requirement R5 (Parts 5.1 – 5.3).	The responsible entity receiving a data specification in Requirement R3 or R4 satisfied the obligations in the data specification but did not meet two of the criteria shown in Requirement R5 (Parts 5.1 – 5.3).	The responsible entity receiving a data specification in Requirement R3 or R4 satisfied the obligations in the data specification but did not meet three of the criteria shown in Requirement R5 (Parts 5.1 – 5.3).	The responsible entity receiving a data specification in Requirement R3 or R4 did not satisfy the obligations of the documented specifications for data.

Standard TOP-003-3-4 — Guidelines and Technical Basis

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed "Proposed" from Effective Date	Errata
1		Modified R1.2 Modified M1 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised
1	October 17, 2008	Adopted by NERC Board of Trustees	
1	March 17, 2011	Order issued by FERC approving TOP-003-1 (approval effective 5/23/11)	
2	May 6, 2012	Revised under Project 2007-03	Revised
2	May 9, 2012	Adopted by Board of Trustees	Revised
3	April 2014	Changes pursuant to Project 2014-03	Revised
3	November 13, 2014	Adopted by Board of Trustees	Revisions under Project 2014-03
3	November 19, 2015	FERC approved TOP-003-3. Docket No. RM15-16-000, Order No. 817	
<u>4</u>		<u>Adopted by Board of Trustees</u>	

Guidelines and Technical Basis

Rationale:

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

Rationale for Definitions:

Changes made to the proposed definitions were made in order to respond to issues raised in NOPR paragraphs 55, 73, and 74 dealing with analysis of SOLs in all time horizons, questions on Protection Systems and Special Protection Systems in NOPR paragraph 78, and recommendations on phase angles from the SW Outage Report (recommendation 27). The intent of such changes is to ensure that Real-time Assessments contain sufficient details to result in an appropriate level of situational awareness. Some examples include: 1) analyzing phase angles which may result in the implementation of an Operating Plan to adjust generation or curtail transactions so that a Transmission facility may be returned to service, or 2) evaluating the impact of a modified Contingency resulting from the status change of a Special Protection Scheme from enabled/in-service to disabled/out-of-service.

Rationale for R1:

Changes to proposed Requirement R1, Part 1.1 are in response to issues raised in NOPR paragraph 67 on the need for obtaining non-BES and external network data necessary for the Transmission Operator to fulfill its responsibilities.

Proposed Requirement R1, Part 1.2 is in response to NOPR paragraph 78 on relay data. The language has been moved from approved PRC-001-1.

Corresponding changes have been made to Requirement R2 for the Balancing Authority and to proposed IRO-010-2, Requirement R1 for the Reliability Coordinator.

Rationale for R5:

Proposed Requirement R5, Part 5.3 is in response to NOPR paragraph 92 where concerns were raised about data exchange through secured networks.

**Mandatory Reliability Standards
Assessment Report No. 14**

Appendix B

**NERC Glossary of Terms used in Reliability
Standards
Updated October 8, 2020**

Glossary of Terms Used in NERC Reliability Standards

Updated October 8, 2020

This Glossary lists each term that was defined for use in one or more of NERC's continent-wide or Regional Reliability Standards and adopted by the NERC Board of Trustees from February 8, 2005 through October 8, 2020.

This reference is divided into four sections, and each section is organized in alphabetical order.

Subject to Enforcement

Pending Enforcement

Retired Terms

Regional Definitions

The first three sections identify all terms that have been adopted by the NERC Board of Trustees for use in continent-wide standards; the Regional definitions section identifies all terms that have been adopted by the NERC Board of Trustees for use in regional standards.

Most of the terms identified in this glossary were adopted as part of the development of NERC's initial set of reliability standards, called the "Version 0" standards. Subsequent to the development of Version 0 standards, new definitions have been developed and approved following NERC's Reliability Standards Development Process, and added to this glossary following board adoption, with the "FERC effective" date added following a final Order approving the definition.

Any comments regarding this glossary should be reported to the NERC Help Desk at <https://support.nerc.net/>. Select "Standards" from the Applications drop down menu and "Other" from the Standards Subcategories drop down menu.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Actual Frequency (F _A)	Project 2010-14.2.1. Phase 2		2/11/2016		7/1/2016	The Interconnection frequency measured in Hertz (Hz).
Actual Net Interchange (NI _A)	Project 2010-14.2.1. Phase 2		2/11/2016		7/1/2016	The algebraic sum of actual megawatt transfers across all Tie Lines, including Pseudo-Ties, to and from all Adjacent Balancing Authority areas within the same Interconnection. Actual megawatt transfers on asynchronous DC tie lines that are directly connected to another Interconnection are excluded from Actual Net Interchange.
Adequacy	Version 0 Reliability Standards		2/8/2005	3/16/2007		The ability of the electric system to supply the aggregate electrical demand and energy requirements of the end-use customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements.
Adjacent Balancing Authority	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	A Balancing Authority whose Balancing Authority Area is interconnected with another Balancing Authority Area either directly or via a multi-party agreement or transmission tariff.
Adverse Reliability Impact	Coordinate Operations		2/7/2006	3/16/2007		The impact of an event that results in frequency-related instability; unplanned tripping of load or generation; or uncontrolled separation or cascading outages that affects a widespread area of the Interconnection.
After the Fact	Project 2007-14	ATF	10/29/2008	12/17/2009		A time classification assigned to an RFI when the submittal time is greater than one hour after the start time of the RFI.
Agreement	Version 0 Reliability Standards		2/8/2005	3/16/2007		A contract or arrangement, either written or verbal and sometimes enforceable by law.
Alternative Interpersonal Communication	Project 2006-06		11/7/2012	4/16/2015	10/1/2015	Any Interpersonal Communication that is able to serve as a substitute for, and does not utilize the same infrastructure (medium) as, Interpersonal Communication used for day-to-day operation.
Altitude Correction Factor	Project 2007-07		2/7/2006	3/16/2007		A multiplier applied to specify distances, which adjusts the distances to account for the change in relative air density (RAD) due to altitude from the RAD used to determine the specified distance. Altitude correction factors apply to both minimum worker approach distances and to minimum vegetation clearance distances.
Ancillary Service	Version 0 Reliability Standards		2/8/2005	3/16/2007		Those services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the Transmission Service Provider's transmission system in accordance with good utility practice. (From FERC order 888-A.)
Anti-Aliasing Filter	Version 0 Reliability Standards		2/8/2005	3/16/2007		An analog filter installed at a metering point to remove the high frequency components of the signal over the AGC sample period.
Area Control Error	Version 0 Reliability Standards	ACE	12/19/2012	10/16/2013	4/1/2014	The instantaneous difference between a Balancing Authority's net actual and scheduled interchange, taking into account the effects of Frequency Bias, correction for meter error, and Automatic Time Error Correction (ATEC), if operating in the ATEC mode. ATEC is only applicable to Balancing Authorities in the Western Interconnection.
Area Interchange Methodology	Project 2006-07		8/22/2008	11/24/2009		The Area Interchange methodology is characterized by determination of incremental transfer capability via simulation, from which Total Transfer Capability (TTC) can be mathematically derived. Capacity Benefit Margin, Transmission Reliability Margin, and Existing Transmission Commitments are subtracted from the TTC, and Postbacks and counterflows are added, to derive Available Transfer Capability. Under the Area Interchange Methodology, TTC results are generally reported on an area to area basis.
Arranged Interchange	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	The state where a Request for Interchange (initial or revised) has been submitted for approval.
Attaining Balancing Authority	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	A Balancing Authority bringing generation or load into its effective control boundaries through a Dynamic Transfer from the Native Balancing Authority.
Automatic Generation Control	Project 2010-14.2.1. Phase 2	AGC	2/11/2016	9/20/2017	1/1/2019	A process designed and used to adjust a Balancing Authority Areas' Demand and resources to help maintain the Reporting ACE in that of a Balancing Authority Area within the bounds required by applicable NERC Reliability Standards.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Automatic Time Error Correction (I_{ATEC})	Project 2010-14.2.1. Phase 2		2/11/2016		7/1/2016	<ul style="list-style-type: none"> • $Y = B_i / B_S$. • H = Number of hours used to payback primary inadvertent interchange energy. The value of H is set to 3. • B_i = Frequency Bias Setting for the Balancing Authority Area (MW / 0.1 Hz). • B_S = Sum of the minimum Frequency Bias Settings for the Interconnection (MW / 0.1 Hz). • Primary Inadvertent Interchange (PII_{hourly}) is $(1-Y) * (II_{actual} - B_i * \Delta TE/6)$ • II_{actual} is the hourly Inadvertent Interchange for the last hour. • ΔTE is the hourly change in system Time Error as distributed by the Interconnection time monitor, where: $\Delta TE = TE_{end\ hour} - TE_{begin\ hour} - TD_{adj} - (t) * (TE_{offset})$
Automatic Time Error Correction (I_{ATEC})	Project 2010-14.2.1. Phase 2		2/11/2016		7/1/2016	<ul style="list-style-type: none"> • TD_{adj} is the Reliability Coordinator adjustment for differences with Interconnection time monitor control center clocks. • t is the number of minutes of manual Time Error Correction that occurred during the hour. • TE_{offset} is 0.000 or +0.020 or -0.020. • PII_{accum} is the Balancing Authority Area's accumulated PIIhourly in MWh. An On-Peak and Off-Peak accumulation accounting is required, where: $PII_{accum}^{on/off\ peak} = last\ period's\ PII_{accum}^{on/off\ peak} + PII_{hourly}$
Automatic Time Error Correction (I_{ATEC}) <i>continued below...</i>	Project 2010-14.2.1. Phase 2		2/11/2016		7/1/2016	<p>The addition of a component to the ACE equation for the Western Interconnection that modifies the control point for the purpose of continuously paying back Primary Inadvertent Interchange to correct accumulated time error. Automatic Time Error Correction is only applicable in the Western Interconnection.</p> <p>When operating in Automatic Time error correction Mode. The absolute value of I_{ATEC} shall not exceed L_{max}.</p> <p>I_{ATEC} shall be zero when operating in any other AGC mode.</p> <ul style="list-style-type: none"> • L_{max} is the maximum value allowed for I_{ATEC} set by each BA between $0.2 * B_i$ and L_{10}, $0.2 * B_i \leq L_{max} \leq L_{10}$. • $L_{10} = 1.65$ • ϵ_{10} is a constant derived from the targeted frequency bound. It is the targeted root-mean-square (RMS) value of ten-minute average $\epsilon_{10} = \sqrt{(-10B_i)(-10B_S)}$ based on frequency performance over a given year. The bound, ϵ_{10}, is the same for every Balancing Authority Area within an Interconnection.
Available Flowgate Capability	Project 2006-07	AFC	8/22/2008	11/24/2009		A measure of the flow capability remaining on a Flowgate for further commercial activity over and above already committed uses. It is defined as TFC less Existing Transmission Commitments (ETC), less a Capacity Benefit Margin, less a Transmission Reliability Margin, plus Postbacks, and plus counterflows.
Available Transfer Capability	Project 2006-07	ATC	8/22/2008	11/24/2009		A measure of the transfer capability remaining in the physical transmission network for further commercial activity over and above already committed uses. It is defined as Total Transfer Capability less Existing Transmission Commitments (including retail customer service), less a Capacity Benefit Margin, less a Transmission Reliability Margin, plus Postbacks, plus counterflows.
Available Transfer Capability Implementation Document	Project 2006-07	ATCID	8/22/2008	11/24/2009		A document that describes the implementation of a methodology for calculating ATC or AFC, and provides information related to a Transmission Service Provider's calculation of ATC or AFC.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Balancing Authority	Project 2010-14.2.1. Phase 2		2/11/2016	9/20/2017	1/1/2019	The responsible entity that integrates resource plans ahead of time, maintains Demand and resource balance within a Balancing Authority Area, and supports Interconnection frequency in real time.
Balancing Authority Area	Version 0 Reliability Standards		2/8/2005	3/16/2007		The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.
Balancing Contingency Event	Project 2010-14.1 Phase 1		11/5/2015	1/19/2017	1/1/2018	Any single event described in Subsections (A), (B), or (C) below, or any series of such otherwise single events, with each separated from the next by one minute or less. A. Sudden loss of generation: a. Due to i. unit tripping, or ii. loss of generator Facility resulting in isolation of the generator from the Bulk Electric System or from the responsible entity's System, or iii. sudden unplanned outage of transmission Facility; b. And, that causes an unexpected change to the responsible entity's ACE; B. Sudden loss of an Import, due to forced outage of transmission equipment that causes an unexpected imbalance between generation and Demand on the Interconnection. C. Sudden restoration of a Demand that was used as a resource that causes an unexpected change to the responsible entity's ACE.
Base Load	Version 0 Reliability Standards		2/8/2005	3/16/2007		The minimum amount of electric power delivered or required over a given period at a constant rate.
BES Cyber Asset	Project 2014-02	BCA	2/12/2015	1/21/2016	7/1/2016	A Cyber Asset that if rendered unavailable, degraded, or misused would, within 15 minutes of its required operation, misoperation, or non-operation, adversely impact one or more Facilities, systems, or equipment, which, if destroyed, degraded, or otherwise rendered unavailable when needed, would affect the reliable operation of the Bulk Electric System. Redundancy of affected Facilities, systems, and equipment shall not be considered when determining adverse impact. Each BES Cyber Asset is included in one or more BES Cyber Systems.
BES Cyber System	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	One or more BES Cyber Assets logically grouped by a responsible entity to perform one or more reliability tasks for a functional entity.
BES Cyber System Information	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	Information about the BES Cyber System that could be used to gain unauthorized access or pose a security threat to the BES Cyber System. BES Cyber System Information does not include individual pieces of information that by themselves do not pose a threat or could not be used to allow unauthorized access to BES Cyber Systems, such as, but not limited to, device names, individual IP addresses without context, ESP names, or policy statements. Examples of BES Cyber System Information may include, but are not limited to, security procedures or security information about BES Cyber Systems, Physical Access Control Systems, and Electronic Access Control or Monitoring Systems that is not publicly available and could be used to allow unauthorized access or unauthorized distribution; collections of network addresses; and network topology of the BES Cyber System.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Blackstart Resource	Project 2015-04		11/5/2015	1/21/2016	7/1/2016	A generating unit(s) and its associated set of equipment which has the ability to be started without support from the System or is designed to remain energized without connection to the remainder of the System, with the ability to energize a bus, meeting the Transmission Operator's restoration plan needs for Real and Reactive Power capability, frequency and voltage control, and that has been included in the Transmission Operator's restoration plan.
Block Dispatch	Project 2006-07		8/22/2008	11/24/2009		A set of dispatch rules such that given a specific amount of load to serve, an approximate generation dispatch can be determined. To accomplish this, the capacity of a given generator is segmented into loadable "blocks," each of which is grouped and ordered relative to other blocks (based on characteristics including, but not limited to, efficiency, run of river or fuel supply considerations, and/or "must-run" status).
Bulk Electric System (continued below)	Project 2010-17	BES	11/21/2013	3/20/2014	7/1/2014 (Please see the Implementation Plan for Phase 2 Compliance obligations.)	<p>Unless modified by the lists shown below, all Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher. This does not include facilities used in the local distribution of electric energy.</p> <p>Inclusions:</p> <ul style="list-style-type: none"> • I1 - Transformers with the primary terminal and at least one secondary terminal operated at 100 kV or higher unless excluded by application of Exclusion E1 or E3. • I2 – Generating resource(s) including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above with: <ul style="list-style-type: none"> a) Gross individual nameplate rating greater than 20 MVA. Or, b) Gross plant/facility aggregate nameplate rating greater than 75 MVA. • I3 - Blackstart Resources identified in the Transmission Operator's restoration plan.
Bulk Electric System (continued below)	Project 2010-17	BES	11/21/2013	3/20/2014	7/1/2014 (Please see the Implementation Plan for Phase 2 Compliance obligations.)	<ul style="list-style-type: none"> • I4 - Dispersed power producing resources that aggregate to a total capacity greater than 75 MVA (gross nameplate rating), and that are connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage of 100 kV or above. Thus, the facilities designated as BES are: <ul style="list-style-type: none"> a) The individual resources, and b) The system designed primarily for delivering capacity from the point where those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above. • I5 –Static or dynamic devices (excluding generators) dedicated to supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage of 100 kV or higher, or through a transformer that is designated in Inclusion I1 unless excluded by application of Exclusion E4.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Bulk Electric System (continued)	Project 2010-17	BES	11/21/2013	3/20/2014	7/1/2014 (Please see the Implementation Plan for Phase 2 Compliance obligations.)	<p>Exclusions:</p> <ul style="list-style-type: none"> • E1 - Radial systems: A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher and: <ol style="list-style-type: none"> a) Only serves Load. Or, b) Only includes generation resources, not identified in Inclusions I2, I3, or I4, with an aggregate capacity less than or equal to 75 MVA (gross nameplate rating). Or, c) Where the radial system serves Load and includes generation resources, not identified in Inclusions I2, I3 or I4, with an aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating). <p>Note 1 – A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion. Note 2 – The presence of a contiguous loop, operated at a voltage level of 50 kV or less, between configurations being considered as radial systems, does not affect this exclusion.</p>
Bulk Electric System (continued)	Project 2010-17	BES	11/21/2013	3/20/2014	7/1/2014 (Please see the Implementation Plan for Phase 2 Compliance obligations.)	<ul style="list-style-type: none"> • E2 - A generating unit or multiple generating units on the customer's side of the retail meter that serve all or part of the retail Load with electric energy if: (i) the net capacity provided to the BES does not exceed 75 MVA, and (ii) standby, back-up, and maintenance power services are provided to the generating unit or multiple generating units or to the retail Load by a Balancing Authority, or provided pursuant to a binding obligation with a Generator Owner or Generator Operator, or under terms approved by the applicable regulatory authority.
Bulk Electric System (continued)	Project 2010-17	BES	11/21/2013	3/20/2014	7/1/2014 (Please see the Implementation Plan for Phase 2 Compliance obligations.)	<ul style="list-style-type: none"> • E3 - Local networks (LN): A group of contiguous transmission Elements operated at less than 300 kV that distribute power to Load rather than transfer bulk power across the interconnected system. LN's emanate from multiple points of connection at 100 kV or higher to improve the level of service to retail customers and not to accommodate bulk power transfer across the interconnected system. The LN is characterized by all of the following: <ol style="list-style-type: none"> a) Limits on connected generation: The LN and its underlying Elements do not include generation resources identified in Inclusions I2, I3, or I4 and do not have an aggregate capacity of non-retail generation greater than 75 MVA (gross nameplate rating); b) Real Power flows only into the LN and the LN does not transfer energy originating outside the LN for delivery through the LN; and
Bulk Electric System (continued)	Project 2010-17	BES	11/21/2013	3/20/2014	7/1/2014 (Please see the Implementation Plan for Phase 2 Compliance obligations.)	<ul style="list-style-type: none"> c) Not part of a Flowgate or transfer path: The LN does not contain any part of a permanent Flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection, or a comparable monitored Facility in the ERCOT or Quebec Interconnections, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL). • E4 – Reactive Power devices installed for the sole benefit of a retail customer(s). <p>Note - Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.</p>

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Bulk-Power System	Project 2015-04		11/5/2015	1/21/2016	7/1/2016	Bulk-Power System: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy. (Note that the terms "Bulk-Power System" or "Bulk Power System" shall have the same meaning.)
Burden	Version 0 Reliability Standards		2/8/2005	3/16/2007		Operation of the Bulk Electric System that violates or is expected to violate a System Operating Limit or Interconnection Reliability Operating Limit in the Interconnection, or that violates any other NERC, Regional Reliability Organization, or local operating reliability standards or criteria.
Bus-tie Breaker	Project 2006-02		8/4/2011	10/17/2013	1/1/2015	A circuit breaker that is positioned to connect two individual substation bus configurations.
Capacity Benefit Margin	Version 0 Reliability Standards	CBM	2/8/2005	3/16/2007		The amount of firm transmission transfer capability preserved by the transmission provider for Load-Serving Entities (LSEs), whose loads are located on that Transmission Service Provider's system, to enable access by the LSEs to generation from interconnected systems to meet generation reliability requirements. Preservation of CBM for an LSE allows that entity to reduce its installed generating capacity below that which may otherwise have been necessary without interconnections to meet its generation reliability requirements. The transmission transfer capability preserved as CBM is intended to be used by the LSE only in times of emergency generation deficiencies.
Capacity Benefit Margin Implementation Document	Project 2006-07	CBMID	11/13/2008	11/24/2009		A document that describes the implementation of a Capacity Benefit Margin methodology.
Capacity Emergency	Version 0 Reliability Standards		2/8/2005	3/16/2007		A capacity emergency exists when a Balancing Authority Area's operating capacity, plus firm purchases from other systems, to the extent available or limited by transfer capability, is inadequate to meet its demand plus its regulating requirements.
Cascading	Project 2015-04		11/5/2015	1/21/2016	7/1/2016	The uncontrolled successive loss of System Elements triggered by an incident at any location. Cascading results in widespread electric service interruption that cannot be restrained from sequentially spreading beyond an area predetermined by studies.
CIP Exceptional Circumstance	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	A situation that involves or threatens to involve one or more of the following, or similar, conditions that impact safety or BES reliability: a risk of injury or death; a natural disaster; civil unrest; an imminent or existing hardware, software, or equipment failure; a Cyber Security Incident requiring emergency assistance; a response by emergency services; the enactment of a mutual assistance agreement; or an impediment of large scale workforce availability.
CIP Senior Manager	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	A single senior management official with overall authority and responsibility for leading and managing implementation of and continuing adherence to the requirements within the NERC CIP Standards, CIP-002 through CIP-011.
Clock Hour	Version 0 Reliability Standards		2/8/2005	3/16/2007		The 60-minute period ending at :00. All surveys, measurements, and reports are based on Clock Hour periods unless specifically noted.
Cogeneration	Version 0 Reliability Standards		2/8/2005	3/16/2007		Production of electricity from steam, heat, or other forms of energy produced as a by-product of another process.
Compliance Monitor	Version 0 Reliability Standards		2/8/2005	3/16/2007		The entity that monitors, reviews, and ensures compliance of responsible entities with reliability standards.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Composite Confirmed Interchange	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	The energy profile (including non-default ramp) throughout a given time period, based on the aggregate of all Confirmed Interchange occurring in that time period.
Composite Protection System	2010-05.1		8/14/2014	5/13/2015	7/1/2016	The total complement of Protection System(s) that function collectively to protect an Element. Backup protection provided by a different Element's Protection System(s) is excluded.
Confirmed Interchange	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	The state where no party has denied and all required parties have approved the Arranged Interchange.
Congestion Management Report	Version 0 Reliability Standards		2/8/2005	3/16/2007		A report that the Interchange Distribution Calculator issues when a Reliability Coordinator initiates the Transmission Loading Relief procedure. This report identifies the transactions and native and network load curtailments that must be initiated to achieve the loading relief requested by the initiating Reliability Coordinator.
Consequential Load Loss	Project 2006-02		8/4/2011	10/17/2013	1/1/2015	All Load that is no longer served by the Transmission system as a result of Transmission Facilities being removed from service by a Protection System operation designed to isolate the fault.
Constrained Facility	Version 0 Reliability Standards		2/8/2005	3/16/2007		A transmission facility (line, transformer, breaker, etc.) that is approaching, is at, or is beyond its System Operating Limit or Interconnection Reliability Operating Limit.
Contact Path	Version 0 Reliability Standards		2/8/2005	3/16/2007		An agreed upon electrical path for the continuous flow of electrical power between the parties of an Interchange Transaction.
Contingency	Version 0 Reliability Standards		2/8/2005	3/16/2007		The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element.
Contingency Event Recovery Period	Project 2010-14.1 Phase 1		11/5/2015	1/19/2017	1/1/2018	A period that begins at the time that the resource output begins to decline within the first one-minute interval of a Reportable Balancing Contingency Event, and extends for fifteen minutes thereafter.
Contingency Reserve	Project 2010-14.1 Phase 1		11/5/2015	1/19/2017	1/1/2018	The provision of capacity that may be deployed by the Balancing Authority to respond to a Balancing Contingency Event and other contingency requirements (such as Energy Emergency Alerts as specified in the associated EOP standard). A Balancing Authority may include in its restoration of Contingency Reserve readiness to reduce Firm Demand and include it if, and only if, the Balancing Authority: <ul style="list-style-type: none"> • is experiencing a Reliability Coordinator declared Energy Emergency Alert level, and is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan. • is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.
Contingency Reserve Restoration Period	Project 2010-14.1 Phase 1		11/5/2015	1/19/2017	1/1/2018	A period not exceeding 90 minutes following the end of the Contingency Event Recovery Period.
Control Center	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	One or more facilities hosting operating personnel that monitor and control the Bulk Electric System (BES) in real-time to perform the reliability tasks, including their associated data centers, of: 1) a Reliability Coordinator, 2) a Balancing Authority, 3) a Transmission Operator for transmission Facilities at two or more locations, or 4) a Generator Operator for generation Facilities at two or more locations.
Control Performance Standard	Version 0 Reliability Standards	CPS	2/8/2005	3/16/2007		The reliability standard that sets the limits of a Balancing Authority's Area Control Error over a specified time period.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Corrective Action Plan	Phase III-IV Planning Standards - Archive		2/7/2006	3/16/2007		A list of actions and an associated timetable for implementation to remedy a specific problem.
Cranking Path	Phase III-IV Planning Standards - Archive		5/2/2006	3/16/2007		A portion of the electric system that can be isolated and then energized to deliver electric power from a generation source to enable the startup of one or more other generating units.
Curtailment	Version 0 Reliability Standards		2/8/2005	3/16/2007		A reduction in the scheduled capacity or energy delivery of an Interchange Transaction.
Curtailment Threshold	Version 0 Reliability Standards		2/8/2005	3/16/2007		The minimum Transfer Distribution Factor which, if exceeded, will subject an Interchange Transaction to curtailment to relieve a transmission facility constraint.
Cyber Assets	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	Programmable electronic devices, including the hardware, software, and data in those devices.
Cyber Security Incident	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	A malicious act or suspicious event that: <ul style="list-style-type: none"> • Compromises, or was an attempt to compromise, the Electronic Security Perimeter or Physical Security Perimeter or, • Disrupts, or was an attempt to disrupt, the operation of a BES Cyber System.
Delayed Fault Clearing	Determine Facility Ratings, Operating Limits, and Transfer Capabilities		11/1/2006	12/27/2007		Fault clearing consistent with correct operation of a breaker failure protection system and its associated breakers, or of a backup protection system with an intentional time delay.
Demand	Version 0 Reliability Standards		2/8/2005	3/16/2007		1. The rate at which electric energy is delivered to or by a system or part of a system, generally expressed in kilowatts or megawatts, at a given instant or averaged over any designated interval of time. 2. The rate at which energy is being used by the customer.
Demand-Side Management	Project 2010-04	DSM	5/6/2014	2/19/2015	7/1/2016	All activities or programs undertaken by any applicable entity to achieve a reduction in Demand.
Dial-up Connectivity	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	A data communication link that is established when the communication equipment dials a phone number and negotiates a connection with the equipment on the other end of the link.
Direct Control Load Management	Project 2008-06	DCLM	2/8/2005	3/16/2007		Demand-Side Management that is under the direct control of the system operator. DCLM may control the electric supply to individual appliances or equipment on customer premises. DCLM as defined here does not include Interruptible Demand.
Dispatch Order	Project 2006-07		8/22/2008	11/24/2009		A set of dispatch rules such that given a specific amount of load to serve, an approximate generation dispatch can be determined. To accomplish this, each generator is ranked by priority.
Dispersed Load by Substations	Version 0 Reliability Standards		2/8/2005	3/16/2007		Substation load information configured to represent a system for power flow or system dynamics modeling purposes, or both.
Distribution Factor	Version 0 Reliability Standards	DF	2/8/2005	3/16/2007		The portion of an Interchange Transaction, typically expressed in per unit that flows across a transmission facility (Flowgate).

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Distribution Provider	Project 2015-04	DP	11/5/2015	1/21/2016	7/1/2016	Provides and operates the “wires” between the transmission system and the end-use customer. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the distribution function at any voltage.
Disturbance	Version 0 Reliability Standards		2/8/2005	3/16/2007		1. An unplanned event that produces an abnormal system condition. 2. Any perturbation to the electric system. 3. The unexpected change in ACE that is caused by the sudden failure of generation or interruption of load.
Disturbance Control Standard	Version 0 Reliability Standards	DCS	2/8/2005	3/16/2007		The reliability standard that sets the time limit following a Disturbance within which a Balancing Authority must return its Area Control Error to within a specified range.
Disturbance Monitoring Equipment	Phase III-IV Planning Standards	DME	8/2/2006	3/16/2007		Devices capable of monitoring and recording system data pertaining to a Disturbance. Such devices include the following categories of recorders* : • Sequence of event recorders which record equipment response to the event • Fault recorders, which record actual waveform data replicating the system primary voltages and currents. This may include protective relays. • Dynamic Disturbance Recorders (DDRs), which record incidents that portray power system behavior during dynamic events such as low-frequency (0.1 Hz – 3 Hz) oscillations and abnormal frequency or voltage excursions *Phasor Measurement Units and any other equipment that meets the functional requirements of DMEs may qualify as DMEs.
Dynamic Interchange Schedule or Dynamic Schedule	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	A time-varying energy transfer that is updated in Real-time and included in the Scheduled Net Interchange (NIS) term in the same manner as an Interchange Schedule in the affected Balancing Authorities’ control ACE equations (or alternate control processes).
Dynamic Transfer	Version 0 Reliability Standards		2/8/2005	3/16/2007		The provision of the real-time monitoring, telemetering, computer software, hardware, communications, engineering, energy accounting (including inadvertent interchange), and administration required to electronically move all or a portion of the real energy services associated with a generator or load out of one Balancing Authority Area into another.
Economic Dispatch	Version 0 Reliability Standards		2/8/2005	3/16/2007		The allocation of demand to individual generating units on line to effect the most economical production of electricity.
Electrical Energy	Version 0 Reliability Standards		2/8/2005	3/16/2007		The generation or use of electric power by a device over a period of time, expressed in kilowatthours (kWh), megawatthours (MWh), or gigawatthours (GWh).
Electronic Access Control or Monitoring Systems	Project 2008-06 Order 706	EACMS	11/26/2012	11/22/2013	7/1/2016	Cyber Assets that perform electronic access control or electronic access monitoring of the Electronic Security Perimeter(s) or BES Cyber Systems. This includes Intermediate Systems.
Electronic Access Point	Project 2008-06 Order 706	EAP	11/26/2012	11/22/2013	7/1/2016	A Cyber Asset interface on an Electronic Security Perimeter that allows routable communication between Cyber Assets outside an Electronic Security Perimeter and Cyber Assets inside an Electronic Security Perimeter.
Electronic Security Perimeter	Project 2008-06 Order 706	ESP	11/26/2012	11/22/2013	7/1/2016	The logical border surrounding a network to which BES Cyber Systems are connected using a routable protocol.
Element	Project 2015-04		11/5/2015	1/21/2016	7/1/2016	Any electrical device with terminals that may be connected to other electrical devices such as a generator, transformer, circuit breaker, bus section, or transmission line. An Element may be comprised of one or more components.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Emergency or BES Emergency	Version 0 Reliability Standards		2/8/2005	3/16/2007		Any abnormal system condition that requires automatic or immediate manual action to prevent or limit the failure of transmission facilities or generation supply that could adversely affect the reliability of the Bulk Electric System.
Emergency Rating	Version 0 Reliability Standards		2/8/2005	3/16/2007		The rating as defined by the equipment owner that specifies the level of electrical loading or output, usually expressed in megawatts (MW) or Mvar or other appropriate units, that a system, facility, or element can support, produce, or withstand for a finite period. The rating assumes acceptable loss of equipment life or other physical or safety limitations for the equipment involved.
Emergency Request for Interchange	Project 2007-14 Coordinate Interchange	Emergency RFI	10/29/2008	12/17/2009		Request for Interchange to be initiated for Emergency or Energy Emergency conditions.
Energy Emergency	Version 0		11/13/2014	11/19/2015	4/1/2017	A condition when a Load-Serving Entity or Balancing Authority has exhausted all other resource options and can no longer meet its expected Load obligations.
Equipment Rating	Determine Facility Ratings, Operating Limits, and Transfer Capabilities		2/7/2006	3/16/2007		The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner.
Existing Transmission Commitments	Project 2006-07	ETC	8/22/2008	11/24/2009		Committed uses of a Transmission Service Provider's Transmission system considered when determining ATC or AFC.
External Routable Connectivity	Project 2008-06 Order 706		11/26/2012	11/22/2013	7/1/2016	The ability to access a BES Cyber System from a Cyber Asset that is outside of its associated Electronic Security Perimeter via a bi-directional routable protocol connection.
Facility	Determine Facility Ratings, Operating Limits, and Transfer Capabilities		2/7/2006	3/16/2007		A set of electrical equipment that operates as a single Bulk Electric System Element (e.g., a line, a generator, a shunt compensator, transformer, etc.)
Facility Rating	Version 0 Reliability Standards		2/8/2005	3/16/2007		The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility.
Fault	Version 0 Reliability Standards		2/8/2005	3/16/2007		An event occurring on an electric system such as a short circuit, a broken wire, or an intermittent connection.
Fire Risk	Project 2007-07		2/7/2006	3/16/2007		The likelihood that a fire will ignite or spread in a particular geographic area.
Firm Demand	Version 0 Reliability Standards		2/8/2005	3/16/2007		That portion of the Demand that a power supplier is obligated to provide except when system reliability is threatened or during emergency conditions.
Firm Transmission Service	Version 0 Reliability Standards		2/8/2005	3/16/2007		The highest quality (priority) service offered to customers under a filed rate schedule that anticipates no planned interruption.
Flashover	Project 2007-07		2/7/2006	3/16/2007		An electrical discharge through air around or over the surface of insulation, between objects of different potential, caused by placing a voltage across the air space that results in the ionization of the air space.
Flowgate	Project 2006-07		8/22/2008	11/24/2009		1.) A portion of the Transmission system through which the Interchange Distribution Calculator calculates the power flow from Interchange Transactions. 2.) A mathematical construct, comprised of one or more monitored transmission Facilities and optionally one or more contingency Facilities, used to analyze the impact of power flows upon the Bulk Electric System.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Flowgate Methodology	Version 0 Reliability Standards		8/22/2008	11/24/2009		The Flowgate methodology is characterized by identification of key Facilities as Flowgates. Total Flowgate Capabilities are determined based on Facility Ratings and voltage and stability limits. The impacts of Existing Transmission Commitments (ETCs) are determined by simulation. The impacts of ETC, Capacity Benefit Margin (CBM) and Transmission Reliability Margin (TRM) are subtracted from the Total Flowgate Capability, and Postbacks and counterflows are added, to determine the Available Flowgate Capability (AFC) value for that Flowgate. AFCs can be used to determine Available Transfer Capability (ATC).
Forced Outage	Version 0 Reliability Standards		2/8/2005	3/16/2007		1. The removal from service availability of a generating unit, transmission line, or other facility for emergency reasons. 2. The condition in which the equipment is unavailable due to unanticipated failure.
Frequency Bias	Version 0 Reliability Standards		2/8/2005	3/16/2007		A value, usually expressed in megawatts per 0.1 Hertz (MW/0.1 Hz), associated with a Balancing Authority Area that approximates the Balancing Authority Area's response to Interconnection frequency error.
Frequency Bias Setting	Project 2007-12		2/7/2013	1/16/2014	4/1/2015	A number, either fixed or variable, usually expressed in MW/0.1 Hz, included in a Balancing Authority's Area Control Error equation to account for the Balancing Authority's inverse Frequency Response contribution to the Interconnection, and discourage response withdrawal through secondary control systems.
Frequency Deviation	Version 0 Reliability Standards		2/8/2005	3/16/2007		A change in Interconnection frequency.
Frequency Error	Version 0 Reliability Standards		2/8/2005	3/16/2007		The difference between the actual and scheduled frequency. ($F_A - F_S$)
Frequency Regulation	Version 0 Reliability Standards		2/8/2005	3/16/2007		The ability of a Balancing Authority to help the Interconnection maintain Scheduled Frequency. This assistance can include both turbine governor response and Automatic Generation Control.
Frequency Response	Version 0 Reliability Standards		2/8/2005	3/16/2007		(Equipment) The ability of a system or elements of the system to react or respond to a change in system frequency. (System) The sum of the change in demand, plus the change in generation, divided by the change in frequency, expressed in megawatts per 0.1 Hertz (MW/0.1 Hz).
Frequency Response Measure	Project 2007-12	FRM	2/7/2013	1/16/2014	4/1/2015	The median of all the Frequency Response observations reported annually by Balancing Authorities or Frequency Response Sharing Groups for frequency events specified by the ERO. This will be calculated as MW/0.1Hz.
Frequency Response Obligation	Project 2007-12	FRO	2/7/2013	1/16/2014	4/1/2015	The Balancing Authority's share of the required Frequency Response needed for the reliable operation of an Interconnection. This will be calculated as MW/0.1Hz.
Frequency Response Sharing Group	Project 2007-12	FRSG	2/7/2013	1/16/2014	4/1/2015	A group whose members consist of two or more Balancing Authorities that collectively maintain, allocate, and supply operating resources required to jointly meet the sum of the Frequency Response Obligations of its members.
Generation Capability Import Requirement	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions	GCIR	11/13/2008	11/24/2009		The amount of generation capability from external sources identified by a Load-Serving Entity (LSE) or Resource Planner (RP) to meet its generation reliability or resource adequacy requirements as an alternative to internal resources.
Generator Operator	Version 0 Reliability Standards	GOP	11/5/2015	1/21/2016	7/1/2016	The entity that operates generating Facility(ies) and performs the functions of supplying energy and Interconnected Operations Services.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Generator Owner	Version 0 Reliability Standards	GO	11/5/2015	1/21/2016	7/1/2016	Entity that owns and maintains generating Facility(ies).
Generator Shift Factor	Version 0 Reliability Standards	GSF	2/8/2005	3/16/2007		A factor to be applied to a generator's expected change in output to determine the amount of flow contribution that change in output will impose on an identified transmission facility or Flowgate.
Generator-to-Load Distribution Factor	Version 0 Reliability Standards	GLDF	2/8/2005	3/16/2007		The algebraic sum of a Generator Shift Factor and a Load Shift Factor to determine the total impact of an Interchange Transaction on an identified transmission facility or Flowgate.
Geomagnetic Disturbance Vulnerability Assessment or GMD Vulnerability Assessment	Project 2013-03 Geomagnetic Disturbance Mitigation	GMD	12/17/2014	9/22/2016	7/1/2017	Documented evaluation of potential susceptibility to voltage collapse, Cascading, or localized damage of equipment due to geomagnetic disturbances.
Host Balancing Authority	Version 0 Reliability Standards		2/8/2005	3/16/2007		1. A Balancing Authority that confirms and implements Interchange Transactions for a Purchasing Selling Entity that operates generation or serves customers directly within the Balancing Authority's metered boundaries. 2. The Balancing Authority within whose metered boundaries a jointly owned unit is physically located.
Hourly Value	Version 0 Reliability Standards		2/8/2005	3/16/2007		Data measured on a Clock Hour basis.
Implemented Interchange	Coordinate Interchange		5/2/2006	3/16/2007		The state where the Balancing Authority enters the Confirmed Interchange into its Area Control Error equation.
Inadvertent Interchange	Version 0 Reliability Standards		2/8/2005	3/16/2007		The difference between the Balancing Authority's Net Actual Interchange and Net Scheduled Interchange. (IA – IS)
Independent Power Producer	Version 0 Reliability Standards	IPP	2/8/2005	3/16/2007		Any entity that owns or operates an electricity generating facility that is not included in an electric utility's rate base. This term includes, but is not limited to, cogenerators and small power producers and all other nonutility electricity producers, such as exempt wholesale generators, who sell electricity.
Institute of Electrical and Electronics Engineers, Inc.	Project 2007-07	IEEE	2/7/2006	3/16/2007		
Interactive Remote Access	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	User-initiated access by a person employing a remote access client or other remote access technology using a routable protocol. Remote access originates from a Cyber Asset that is not an Intermediate System and not located within any of the Responsible Entity's Electronic Security Perimeter(s) or at a defined Electronic Access Point (EAP). Remote access may be initiated from: 1) Cyber Assets used or owned by the Responsible Entity, 2) Cyber Assets used or owned by employees, and 3) Cyber Assets used or owned by vendors, contractors, or consultants. Interactive remote access does not include system-to-system process communications.
Interchange	Coordinate Interchange		5/2/2006	3/16/2007		Energy transfers that cross Balancing Authority boundaries.
Interchange Authority	Project 2015-04	IA	11/5/2015	1/21/2016	7/1/2016	The responsible entity that authorizes the implementation of valid and balanced Interchange Schedules between Balancing Authority Areas, and ensures communication of Interchange information for reliability assessment purposes.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Interchange Distribution Calculator	Version 0 Reliability Standards		2/8/2005	3/16/2007		The mechanism used by Reliability Coordinators in the Eastern Interconnection to calculate the distribution of Interchange Transactions over specific Flowgates. It includes a database of all Interchange Transactions and a matrix of the Distribution Factors for the Eastern Interconnection.
Interchange Meter Error (IME)	Project 2010-14.2.1. Phase 2		2/11/2016		7/1/2016	A term used in the Reporting ACE calculation to compensate for data or equipment errors affecting any other components of the Reporting ACE calculation.
Interchange Schedule	Version 0 Reliability Standards		2/8/2005	3/16/2007		An agreed-upon Interchange Transaction size (megawatts), start and end time, beginning and ending ramp times and rate, and type required for delivery and receipt of power and energy between the Source and Sink Balancing Authorities involved in the transaction.
Interchange Transaction	Version 0 Reliability Standards		2/8/2005	3/16/2007		An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries.
Interchange Transaction Tag or Tag	Version 0 Reliability Standards		2/8/2005	3/16/2007		The details of an Interchange Transaction required for its physical implementation.
Interconnected Operations Service	Project 2015-04		11/5/2015	1/21/2016	7/1/2016	A service (exclusive of basic energy and Transmission Services) that is required to support the Reliable Operation of interconnected Bulk Electric Systems.
Interconnection	Project 2015-04		11/5/2015	1/21/2016	7/1/2016	A geographic area in which the operation of Bulk Power System components is synchronized such that the failure of one or more of such components may adversely affect the ability of the operators of other components within the system to maintain Reliable Operation of the Facilities within their control. When capitalized, any one of the four major electric system networks in North America: Eastern, Western, ERCOT and Quebec.
Interconnection Reliability Operating Limit	Determine Facility Ratings, Operating Limits, and Transfer Capabilities	IROL	11/1/2006	12/27/2007		A System Operating Limit that, if violated, could lead to instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System.
Interconnection Reliability Operating Limit T _v	Determine Facility Ratings, Operating Limits, and Transfer Capabilities	IROL T _v	11/1/2006	12/27/2007		The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's T _v shall be less than or equal to 30 minutes.
Intermediate Balancing Authority	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	A Balancing Authority on the scheduling path of an Interchange Transaction other than the Source Balancing Authority and Sink Balancing Authority.
Intermediate System	Project 2008-06		11/26/2012	11/22/2013	7/1/2016	A Cyber Asset or collection of Cyber Assets performing access control to restrict Interactive Remote Access to only authorized users. The Intermediate System must not be located inside the Electronic Security Perimeter.
Interpersonal Communication	Project 2006-06		11/7/2012	4/16/2015	10/1/2015	Any medium that allows two or more individuals to interact, consult, or exchange information.
Interruptible Load or Interruptible Demand	Version 0 Reliability Standards		11/1/2006	3/16/2007		Demand that the end-use customer makes available to its Load-Serving Entity via contract or agreement for curtailment.
Joint Control	Version 0 Reliability Standards		2/8/2005	3/16/2007		Automatic Generation Control of jointly owned units by two or more Balancing Authorities.
Limiting Element	Version 0 Reliability Standards		2/8/2005	3/16/2007		The element that is 1.)Either operating at its appropriate rating, or 2.) Would be following the limiting contingency. Thus, the Limiting Element establishes a system limit.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Load	Version 0 Reliability Standards		2/8/2005	3/16/2007		An end-use device or customer that receives power from the electric system.
Load Shift Factor	Version 0 Reliability Standards	LSF	2/8/2005	3/16/2007		A factor to be applied to a load's expected change in demand to determine the amount of flow contribution that change in demand will impose on an identified transmission facility or monitored Flowgate.
Load-Serving Entity	Project 2015-04	LSE	11/5/2015	1/21/2016	7/1/2016	Secures energy and Transmission Service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.
Long-Term Transmission Planning Horizon	Project 2006-02		8/4/2011	10/17/2013	1/1/2015	Transmission planning period that covers years six through ten or beyond when required to accommodate any known longer lead time projects that may take longer than ten years to complete.
Market Flow	Project 2006-08 Reliability Coordination - Transmission Loading Relief		11/4/2010	4/21/2011		The total amount of power flowing across a specified Facility or set of Facilities due to a market dispatch of generation internal to the market to serve load internal to the market.
Minimum Vegetation Clearance Distance	Project 2007-07	MVCD	11/3/2011	3/21/2013	7/1/2014	The calculated minimum distance stated in feet (meters) to prevent flash-over between conductors and vegetation, for various altitudes and operating voltages.
Misoperation	Project 2010-05.1		8/14/2014	5/13/2015	7/1/2016	<p>The failure of a Composite Protection System to operate as intended for protection purposes. Any of the following is a Misoperation:</p> <ol style="list-style-type: none"> 1. Failure to Trip – During Fault – A failure of a Composite Protection System to operate for a Fault condition for which it is designed. The failure of a Protection System component is not a Misoperation as long as the performance of the Composite Protection System is correct. 2. Failure to Trip – Other Than Fault – A failure of a Composite Protection System to operate for a non-Fault condition for which it is designed, such as a power swing, undervoltage, overexcitation, or loss of excitation. The failure of a Protection System component is not a Misoperation as long as the performance of the Composite Protection System is correct. 3. Slow Trip – During Fault – A Composite Protection System operation that is slower than required for a Fault condition if the duration of its operating time resulted in the operation of at least one other Element's Composite Protection System. (continued below...)
Misoperation (continued...)	Project 2010-05.1		8/14/2014	5/13/2015	7/1/2016	<ol style="list-style-type: none"> 4. Slow Trip – Other Than Fault – A Composite Protection System operation that is slower than required for a non-Fault condition, such as a power swing, undervoltage, overexcitation, or loss of excitation, if the duration of its operating time resulted in the operation of at least one other Element's Composite Protection System. 5. Unnecessary Trip – During Fault – An unnecessary Composite Protection System operation for a Fault condition on another Element. 6. Unnecessary Trip – Other Than Fault – An unnecessary Composite Protection System operation for a non-Fault condition. A Composite Protection System operation that is caused by personnel during on-site maintenance, testing, inspection, construction, or commissioning activities is not a Misoperation.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Most Severe Single Contingency	Project 2010-14.1 Phase 1	MSSC	11/5/2015	1/19/2017	1/1/2018	The Balancing Contingency Event, due to a single contingency identified using system models maintained within the Reserve Sharing Group (RSG) or a Balancing Authority's area that is not part of a Reserve Sharing Group, that would result in the greatest loss (measured in MW) of resource output used by the RSG or a Balancing Authority that is not participating as a member of a RSG at the time of the event to meet Firm Demand and export obligation (excluding export obligation for which Contingency Reserve obligations are being met by the Sink Balancing Authority).
Native Balancing Authority	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	A Balancing Authority from which a portion of its physically interconnected generation and/or load is transferred from its effective control boundaries to the Attaining Balancing Authority through a Dynamic Transfer.
Native Load	Version 0 Reliability Standards		2/8/2005	3/16/2007		The end-use customers that the Load-Serving Entity is obligated to serve.
Near-Term Transmission Planning Horizon	Project 2010-10		1/24/2011	11/17/2011		The transmission planning period that covers Year One through five.
Net Actual Interchange	Version 0 Reliability Standards		2/8/2005	3/16/2007		The algebraic sum of all metered interchange over all interconnections between two physically Adjacent Balancing Authority Areas.
Net Energy for Load	Version 0 Reliability Standards		2/8/2005	3/16/2007		Net Balancing Authority Area generation, plus energy received from other Balancing Authority Areas, less energy delivered to Balancing Authority Areas through interchange. It includes Balancing Authority Area losses but excludes energy required for storage at energy storage facilities.
Net Interchange Schedule	Version 0 Reliability Standards		2/8/2005	3/16/2007		The algebraic sum of all Interchange Schedules with each Adjacent Balancing Authority.
Net Scheduled Interchange	Version 0 Reliability Standards		2/8/2005	3/16/2007		The algebraic sum of all Interchange Schedules across a given path or between Balancing Authorities for a given period or instant in time.
Network Integration Transmission Service	Version 0 Reliability Standards		2/8/2005	3/16/2007		Service that allows an electric transmission customer to integrate, plan, economically dispatch and regulate its network reserves in a manner comparable to that in which the Transmission Owner serves Native Load customers.
Non-Consequential Load Loss	Project 2006-02		8/4/2011	10/17/2013	1/1/2015	Non-Interruptible Load loss that does not include: (1) Consequential Load Loss, (2) the response of voltage sensitive Load, or (3) Load that is disconnected from the System by end-user equipment.
Non-Firm Transmission Service	Version 0 Reliability Standards		2/8/2005	3/16/2007		Transmission service that is reserved on an as-available basis and is subject to curtailment or interruption.
Non-Spinning Reserve	Version 0 Reliability Standards		2/8/2005	3/16/2007		1. That generating reserve not connected to the system but capable of serving demand within a specified time. 2. Interruptible load that can be removed from the system in a specified time.
Normal Clearing	Determine Facility Ratings, Operating Limits, and Transfer Capabilities		11/1/2006	12/27/2007		A protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protection systems.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Normal Rating	Version 0 Reliability Standards		2/8/2005	3/16/2007		The rating as defined by the equipment owner that specifies the level of electrical loading, usually expressed in megawatts (MW) or other appropriate units that a system, facility, or element can support or withstand through the daily demand cycles without loss of equipment life.
Nuclear Plant Generator Operator	Project 2009-08		5/2/2007	10/16/2008		Any Generator Operator or Generator Owner that is a Nuclear Plant Licensee responsible for operation of a nuclear facility licensed to produce commercial power.
Nuclear Plant Interface Requirements	Project 2009-08	NPIRs	5/2/2007	10/16/2008		The requirements based on NPIRs and Bulk Electric System requirements that have been mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities.
Nuclear Plant Licensing Requirements	Project 2009-08	NPLRs	5/2/2007	10/16/2008		Requirements included in the design basis of the nuclear plant and statutorily mandated for the operation of the plant, including nuclear power plant licensing requirements for: 1) Off-site power supply to enable safe shutdown of the plant during an electric system or plant event; and 2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.
Nuclear Plant Off-site Power Supply (Off-site Power)	Project 2009-08		5/2/2007	10/16/2008		The electric power supply provided from the electric system to the nuclear power plant distribution system as required per the nuclear power plant license.
Off-Peak	Version 0 Reliability Standards		2/8/2005	3/16/2007		Those hours or other periods defined by NAESB business practices, contract, agreements, or guides as periods of lower electrical demand.
On-Peak	Version 0 Reliability Standards		2/8/2005	3/16/2007		Those hours or other periods defined by NAESB business practices, contract, agreements, or guides as periods of higher electrical demand.
Open Access Same Time Information Service	Version 0 Reliability Standards	OASIS	2/8/2005	3/16/2007		An electronic posting system that the Transmission Service Provider maintains for transmission access data and that allows all transmission customers to view the data simultaneously.
Open Access Transmission Tariff	Version 0 Reliability Standards	OATT	2/8/2005	3/16/2007		Electronic transmission tariff accepted by the U.S. Federal Energy Regulatory Commission requiring the Transmission Service Provider to furnish to all shippers with non-discriminating service comparable to that provided by Transmission Owners to themselves.
Operating Instruction	Project 2007-02		5/6/2014	4/16/2015	7/1/2016	A command by operating personnel responsible for the Real-time operation of the interconnected Bulk Electric System to change or preserve the state, status, output, or input of an Element of the Bulk Electric System or Facility of the Bulk Electric System. (A discussion of general information and of potential options or alternatives to resolve Bulk Electric System operating concerns is not a command and is not considered an Operating Instruction.)
Operating Plan	Coordinate Operations		2/7/2006	3/16/2007		A document that identifies a group of activities that may be used to achieve some goal. An Operating Plan may contain Operating Procedures and Operating Processes. A company-specific system restoration plan that includes an Operating Procedure for black-starting units, Operating Processes for communicating restoration progress with other entities, etc., is an example of an Operating Plan.
Operating Procedure	Coordinate Operations		2/7/2006	3/16/2007		A document that identifies specific steps or tasks that should be taken by one or more specific operating positions to achieve specific operating goal(s). The steps in an Operating Procedure should be followed in the order in which they are presented, and should be performed by the position(s) identified. A document that lists the specific steps for a system operator to take in removing a specific transmission line from service is an example of an Operating Procedure.
Operating Process	Coordinate Operations		2/7/2006	3/16/2007		A document that identifies general steps for achieving a generic operating goal. An Operating Process includes steps with options that may be selected depending upon Real-time conditions. A guideline for controlling high voltage is an example of an Operating Process.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Operating Reserve	Version 0 Reliability Standards		2/8/2005	3/16/2007		That capability above firm system demand required to provide for regulation, load forecasting error, equipment forced and scheduled outages and local area protection. It consists of spinning and non-spinning reserve.
Operating Reserve – Spinning	Version 0 Reliability Standards		2/8/2005	3/16/2007		The portion of Operating Reserve consisting of: <ul style="list-style-type: none"> • Generation synchronized to the system and fully available to serve load within the Disturbance Recovery Period following the contingency event; or • Load fully removable from the system within the Disturbance Recovery Period following the contingency event.
Operating Reserve – Supplemental	Version 0 Reliability Standards		2/8/2005	3/16/2007		The portion of Operating Reserve consisting of: <ul style="list-style-type: none"> • Generation (synchronized or capable of being synchronized to the system) that is fully available to serve load within the Disturbance Recovery Period following the contingency event; or • Load fully removable from the system within the Disturbance Recovery Period following the contingency event.
Operating Voltage	Project 2007-07		2/7/2006	3/16/2007		The voltage level by which an electrical system is designated and to which certain operating characteristics of the system are related; also, the effective (root-mean-square) potential difference between any two conductors or between a conductor and the ground. The actual voltage of the circuit may vary somewhat above or below this value.
Operational Planning Analysis	Project 2014-03	OPA	11/13/2014	11/19/2015	1/1/2017	An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to, load forecasts; generation output levels; Interchange; known Protection System and Special Protection System status or degradation; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.)
Operations Support Personnel	Project 2010-01		2/6/2014	6/19/2014	7/1/2016	Individuals who perform current day or next day outage coordination or assessments, or who determine SOLs, IROLs, or operating nomograms, ¹ in direct support of Real-time operations of the Bulk Electric System.
Outage Transfer Distribution Factor	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions	OTDF	8/22/2008	11/24/2009		In the post-contingency configuration of a system under study, the electric Power Transfer Distribution Factor (PTDF) with one or more system Facilities removed from service (outaged).
Overlap Regulation Service	Version 0 Reliability Standards		2/8/2005	3/16/2007		A method of providing regulation service in which the Balancing Authority providing the regulation service incorporates another Balancing Authority's actual interchange, frequency response, and schedules into providing Balancing Authority's AGC/ACE equation.
Participation Factors	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions		8/22/2008	11/24/2009		A set of dispatch rules such that given a specific amount of load to serve, an approximate generation dispatch can be determined. To accomplish this, generators are assigned a percentage that they will contribute to serve load.
Peak Demand	Version 0 Reliability Standards		2/8/2005	3/16/2007		<ol style="list-style-type: none"> 1. The highest hourly integrated Net Energy For Load within a Balancing Authority Area occurring within a given period (e.g., day, month, season, or year). 2. The highest instantaneous demand within the Balancing Authority Area.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Performance-Reset Period	Determine Facility Ratings, Operating Limits, and Transfer Capabilities		2/7/2006	3/16/2007		The time period that the entity being assessed must operate without any violations to reset the level of non compliance to zero.
Physical Access Control Systems	Project 2008-06 Cyber Security Order 706	PACS	11/26/2012	11/22/2013	7/1/2016	Cyber Assets that control, alert, or log access to the Physical Security Perimeter(s), exclusive of locally mounted hardware or devices at the Physical Security Perimeter such as motion sensors, electronic lock control mechanisms, and badge readers.
Physical Security Perimeter	Project 2008-06 Cyber Security Order 706	PSP	11/26/2012	11/22/2013	7/1/2016	The physical border surrounding locations in which BES Cyber Assets, BES Cyber Systems, or Electronic Access Control or Monitoring Systems reside, and for which access is controlled.
Planning Assessment	Project 2006-02 Assess Transmission Future Needs and Develop Transmission Plans		8/4/2011	10/17/2013	1/1/2015	Documented evaluation of future Transmission System performance and Corrective Action Plans to remedy identified deficiencies.
Planning Authority	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	The responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems.
Planning Coordinator	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions	PC	8/22/2008	11/24/2009		See Planning Authority.
Point of Delivery	Version 0 Reliability Standards	POD	2/8/2005	3/16/2007		A location that the Transmission Service Provider specifies on its transmission system where an Interchange Transaction leaves or a Load-Serving Entity receives its energy.
Point of Receipt	Project 2015-04 Alignment of Terms	POR	11/5/2015	1/21/2016	7/1/2016	A location that the Transmission Service Provider specifies on its transmission system where an Interchange Transaction enters or a generator delivers its output.
Point to Point Transmission Service	Version 0 Reliability Standards	PTP	2/8/2005	3/16/2007		The reservation and transmission of capacity and energy on either a firm or non-firm basis from the Point(s) of Receipt to the Point(s) of Delivery.
Power Transfer Distribution Factor	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions	PTDF	8/22/2008	11/24/2009		In the pre-contingency configuration of a system under study, a measure of the responsiveness or change in electrical loadings on transmission system Facilities due to a change in electric power transfer from one area to another, expressed in percent (up to 100%) of the change in power transfer
Pre-Reporting Contingency Event ACE Value	Project 2010-14.1 Phase 1		11/5/2015	1/19/2017	1/1/2018	The average value of Reporting ACE, or Reserve Sharing Group Reporting ACE when applicable, in the 16-second interval immediately prior to the start of the Contingency Event Recovery Period based on EMS scan rate data.
Pro Forma Tariff	Version 0 Reliability Standards		2/8/2005	3/16/2007		Usually refers to the standard OATT and/or associated transmission rights mandated by the U.S. Federal Energy Regulatory Commission Order No. 888.
Protected Cyber Assets	Project 2014-02	PCA	2/12/2015	1/21/2016	7/1/2016	One or more Cyber Assets connected using a routable protocol within or on an Electronic Security Perimeter that is not part of the highest impact BES Cyber System within the same Electronic Security Perimeter. The impact rating of Protected Cyber Assets is equal to the highest rated BES Cyber System in the same ESP.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Protection System	Project 2007-17 Protection System Maintenance and Testing		11/19/2010	2/3/2012	4/1/2013	Protection System – <ul style="list-style-type: none"> • Protective relays which respond to electrical quantities, • Communications systems necessary for correct operation of protective functions • Voltage and current sensing devices providing inputs to protective relays, • Station dc supply associated with protective functions (including station batteries, battery chargers, and non-battery-based dc supply), and • Control circuitry associated with protective functions through the trip coil(s) of the circuit breakers or other interrupting devices.
Protection System Maintenance Program (PRC-005-6)	Project 2007-17.4 PRC-005 FERC Order No 803 Directive	PSMP	11/5/2015	12/18/2015	1/1/2016	An ongoing program by which Protection System, Automatic Reclosing, and Sudden Pressure Relaying Components are kept in working order and proper operation of malfunctioning Components is restored. A maintenance program for a specific Component includes one or more of the following activities: <ul style="list-style-type: none"> • Verify — Determine that the Component is functioning correctly. • Monitor — Observe the routine in-service operation of the Component. • Test — Apply signals to a Component to observe functional performance or output behavior, or to diagnose problems. • Inspect — Examine for signs of Component failure, reduced performance or degradation. • Calibrate — Adjust the operating threshold or measurement accuracy of a measuring element to meet the intended performance requirement.
Pseudo-Tie	Project 2010-14.2.1. Phase 2		2/11/2016	9/20/2017	1/1/2019	A time-varying energy transfer that is updated in Real-time and included in the Actual Net Interchange term (NIA) in the same manner as a Tie Line in the affected Balancing Authorities' Reporting ACE equation (or alternate control processes).
Purchasing-Selling Entity	Version 0 Reliability Standards	PSE	2/8/2005	3/16/2007		The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities.
Ramp Rate or Ramp	Version 0 Reliability Standards		2/8/2005	3/16/2007		(Schedule) The rate, expressed in megawatts per minute, at which the interchange schedule is attained during the ramp period. (Generator) The rate, expressed in megawatts per minute, that a generator changes its output.
Rated Electrical Operating Conditions	Project 2007-07 Transmission Vegetation Management		2/7/2006	3/16/2007		The specified or reasonably anticipated conditions under which the electrical system or an individual electrical circuit is intend/designed to operate
Rated System Path Methodology	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions		8/22/2008	11/24/2009		The Rated System Path Methodology is characterized by an initial Total Transfer Capability (TTC), determined via simulation. Capacity Benefit Margin, Transmission Reliability Margin, and Existing Transmission Commitments are subtracted from TTC, and Postbacks and counterflows are added as applicable, to derive Available Transfer Capability. Under the Rated System Path Methodology, TTC results are generally reported as specific transmission path capabilities.
Rating	Version 0 Reliability Standards		2/8/2005	3/16/2007		The operational limits of a transmission system element under a set of specified conditions.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Reactive Power	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	The portion of electricity that establishes and sustains the electric and magnetic fields of alternating-current equipment. Reactive Power must be supplied to most types of magnetic equipment, such as motors and transformers. It also must supply the reactive losses on transmission facilities. Reactive Power is provided by generators, synchronous condensers, or electrostatic equipment such as capacitors and directly influences electric system voltage. It is usually expressed in kilovars (kvar) or megavars (Mvar).
Real Power	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	The portion of electricity that supplies energy to the Load.
Real-time	Coordinate Operations		2/7/2006	3/16/2007		Present time as opposed to future time. (From Interconnection Reliability Operating Limits standard.)
Real-time Assessment	Project 2014-03		11/13/2014	Revised definition. 11/19/2015	1/1/2017	An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load, generation output levels, known Protection System and Special Protection System status or degradation, Transmission outages, generator outages, Interchange, Facility Ratings, and identified phase angle and equipment limitations. (Real-time Assessment may be provided through internal systems or through third-party services.)
Receiving Balancing Authority	Version 0 Reliability Standards		2/8/2005	3/16/2007		The Balancing Authority importing the Interchange.
Regional Reliability Organization	Version 0 Reliability Standards	RRO	2/8/2005	3/16/2007		1. An entity that ensures that a defined area of the Bulk Electric System is reliable, adequate and secure. 2. A member of the North American Electric Reliability Council. The Regional Reliability Organization can serve as the Compliance Monitor.
Regional Reliability Plan	Version 0 Reliability Standards		2/8/2005	3/16/2007		The plan that specifies the Reliability Coordinators and Balancing Authorities within the Regional Reliability Organization, and explains how reliability coordination will be accomplished.
Regulating Reserve	Version 0 Reliability Standards		2/8/2005	3/16/2007		An amount of reserve responsive to Automatic Generation Control, which is sufficient to provide normal regulating margin.
Regulation Reserve Sharing Group	Project 2010-14.1 Phase 1		8/15/2013	4/16/2015	7/1/2016	A group whose members consist of two or more Balancing Authorities that collectively maintain, allocate, and supply the Regulating Reserve required for all member Balancing Authorities to use in meeting applicable regulating standards.
Regulation Service	Version 0 Reliability Standards		2/8/2005	3/16/2007		The process whereby one Balancing Authority contracts to provide corrective response to all or a portion of the ACE of another Balancing Authority. The Balancing Authority providing the response assumes the obligation of meeting all applicable control criteria as specified by NERC for itself and the Balancing Authority for which it is providing the Regulation Service.
Reliability Adjustment Arranged Interchange	Project 2008-12 Coordinate Interchange Standards		2/6/2014	6/30/2014	10/1/2014	A request to modify a Confirmed Interchange or Implemented Interchange for reliability purposes.
Reliability Adjustment RFI	Project 2007-14 Coordinate Interchange - Timing Table		10/29/2008	12/17/2009		Request to modify an Implemented Interchange Schedule for reliability purposes.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Reliability Coordinator	Project 2015-04 Alignment of Terms	RC	11/5/2015	1/21/2016	7/1/2016	The entity that is the highest level of authority who is responsible for the Reliable Operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of Interconnection Reliability Operating Limits, which may be based on the operating parameters of transmission systems beyond any Transmission Operator's vision.
Reliability Coordinator Area	Version 0 Reliability Standards		2/8/2005	3/16/2007		The collection of generation, transmission, and loads within the boundaries of the Reliability Coordinator. Its boundary coincides with one or more Balancing Authority Areas.
Reliability Coordinator Information System	Version 0 Reliability Standards	RCIS	2/8/2005	3/16/2007		The system that Reliability Coordinators use to post messages and share operating information in real time.
Reliability Standard	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	A requirement, approved by the United States Federal Energy Regulatory Commission under Section 215 of the Federal Power Act, or approved or recognized by an applicable governmental authority in other jurisdictions, to provide for Reliable Operation of the Bulk-Power System. The term includes requirements for the operation of existing Bulk-Power System facilities, including cybersecurity protection, and the design of planned additions or modifications to such facilities to the extent necessary to provide for Reliable Operation of the Bulk-Power System, but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.
Reliable Operation	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	Operating the elements of the [Bulk-Power System] within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure of system elements.
Remedial Action Scheme	Project 2010-05.2	RAS	11/13/2014	11/19/2015	4/1/2017	<p>A scheme designed to detect predetermined System conditions and automatically take corrective actions that may include, but are not limited to, adjusting or tripping generation (MW and Mvar), tripping load, or reconfiguring a System(s). RAS accomplish objectives such as:</p> <ul style="list-style-type: none"> • Meet requirements identified in the NERC Reliability Standards; • Maintain Bulk Electric System (BES) stability; • Maintain acceptable BES voltages; • Maintain acceptable BES power flows; • Limit the impact of Cascading or extreme events. <p>The following do not individually constitute a RAS:</p> <ol style="list-style-type: none"> a. Protection Systems installed for the purpose of detecting Faults on BES Elements and isolating the faulted Elements b. Schemes for automatic underfrequency load shedding (UFLS) and automatic undervoltage load shedding (UVLS) comprised of only distributed relays c. Out-of-step tripping and power swing blocking d. Automatic reclosing schemes e. Schemes applied on an Element for non-Fault conditions, such as, but not limited to, generator loss-of-field, transformer top-oil temperature, overvoltage, or overload to protect the Element against damage by removing it from service

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Remedial Action Scheme <i>Continued</i>	Project 2010-05.2	RAS	11/13/2014	11/19/2015	4/1/2017	<p>f. Controllers that switch or regulate one or more of the following: series or shunt reactive devices, flexible alternating current transmission system (FACTS) devices, phase-shifting transformers, variable-frequency transformers, or tap-changing transformers; and, that are located at and monitor quantities solely at the same station as the Element being switched or regulated</p> <p>g. FACTS controllers that remotely switch static shunt reactive devices located at other stations to regulate the output of a single FACTS device</p> <p>h. Schemes or controllers that remotely switch shunt reactors and shunt capacitors for voltage regulation that would otherwise be manually switched</p> <p>i. Schemes that automatically de-energize a line for a non-Fault operation when one end of the line is open</p> <p>j. Schemes that provide anti-islanding protection (e.g., protect load from effects of being isolated with generation that may not be capable of maintaining acceptable frequency and voltage)</p> <p>k. Automatic sequences that proceed when manually initiated solely by a System Operator</p> <p>l. Modulation of HVdc or FACTS via supplementary controls, such as angle damping or frequency damping applied to damp local or inter-area oscillations</p> <p>m. Sub-synchronous resonance (SSR) protection schemes that directly detect sub-synchronous quantities (e.g., currents or torsional oscillations)</p>
Remedial Action Scheme <i>Continued</i>	Project 2010-05.2	RAS	11/13/2014	11/19/2015	4/1/2017	<p>n. Generator controls such as, but not limited to, automatic generation control (AGC), generation excitation [e.g. automatic voltage regulation (AVR) and power system stabilizers (PSS)], fast valving, and speed governing</p>
Removable Media	Project 2016-02 Modifications to CIP Standards		2/9/2017	4/19/2018	1/1/2020	<p>Storage media that:</p> <ol style="list-style-type: none"> 1. are not Cyber Assets, 2. are capable of transferring executable code, 3. can be used to store, copy, move, or access data, and 4. are directly connected for 30 consecutive calendar days or less to a: <ul style="list-style-type: none"> • BES Cyber Asset, • network within an Electronic Security Perimeter (ESP) containing high or medium impact BES Cyber Systems, or • Protected Cyber Asset associated with high or medium impact BES Cyber Systems. <p>Examples of Removable Media include, but are not limited to, floppy disks, compact disks, USB flash drives, external hard drives, and other flash memory cards/drives that contain nonvolatile memory.</p>
Reportable Balancing Contingency Event	Project 2010-14.1 Phase 1		11/5/2015	1/19/2017	1/1/2018	<p>Any Balancing Contingency Event occurring within a one-minute interval of an initial sudden decline in ACE based on EMS scan rate data that results in a loss of MW output less than or equal to the Most Severe Single Contingency, and greater than or equal to the lesser amount of: (i) 80% of the Most Severe Single Contingency, or (ii) the amount listed below for the applicable Interconnection. Prior to any given calendar quarter, the 80% threshold may be reduced by the responsible entity upon written notification to the Regional Entity.</p> <ul style="list-style-type: none"> • Eastern Interconnection – 900 MW • Western Interconnection – 500 MW • ERCOT – 800 MW • Quebec – 500 MW

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Reportable Cyber Security Incident	Project 2008-06 Cyber Security Order 706 V5 CIP Standards		11/26/2012	11/22/2013	7/1/2016	A Cyber Security Incident that has compromised or disrupted one or more reliability tasks of a functional entity.
Reportable Disturbance	Version 0 Reliability Standards		2/8/2005	3/16/2007		Any event that causes an ACE change greater than or equal to 80% of a Balancing Authority's or reserve sharing group's most severe contingency. The definition of a reportable disturbance is specified by each Regional Reliability Organization. This definition may not be retroactively adjusted in response to observed performance.
Reporting ACE	Project 2010-14.2.1. Phase 2		2/11/2016		7/1/2016	<p>The scan rate values of a Balancing Authority Area's (BAA) Area Control Error (ACE) measured in MW includes the difference between the Balancing Authority Area's Actual Net Interchange and its Scheduled Net Interchange, plus its Frequency Bias Setting obligation, plus correction for any known meter error. In the Western Interconnection, Reporting ACE includes Automatic Time Error Correction (ATEC).</p> <p>Reporting ACE is calculated as follows: $\text{Reporting ACE} = (NI_A - NI_S) - 10B (F_A - F_S) - I_{ME}$ Reporting ACE is calculated in the Western Interconnection as follows: $\text{Reporting ACE} = (NI_A - NI_S) - 10B (F_A - F_S) - I_{ME} + I_{ATEC}$</p> <p>Where:</p> <ul style="list-style-type: none"> • NI_A = Actual Net Interchange. • NI_S = Scheduled Net Interchange. • B = Frequency Bias Setting. • F_A = Actual Frequency. • F_S = Scheduled Frequency. • I_{ME} = Interchange Meter Error. • I_{ATEC} = Automatic Time Error Correction.
Reporting ACE (continued)	Project 2010-14.2.1. Phase 2		2/11/2016		7/1/2016	<p>All NERC Interconnections operate using the principles of Tie-line Bias (TLB) Control and require the use of an ACE equation similar to the Reporting ACE defined above. Any modification(s) to this specified Reporting ACE equation that is(are) implemented for all BAAs on an Interconnection and is(are) consistent with the following four principles of Tie Line Bias control will provide a valid alternative to this Reporting ACE equation:</p> <ol style="list-style-type: none"> 1. All portions of the Interconnection are included in exactly one BAA so that the sum of all BAAs' generation, load, and loss is the same as total Interconnection generation, load, and loss; 2. The algebraic sum of all BAAs' Scheduled Net Interchange is equal to zero at all times and the sum of all BAAs' Actual Net Interchange values is equal to zero at all times; 3. The use of a common Scheduled Frequency F_S for all BAAs at all times; and, 4. Excludes metering or computational errors. (The inclusion and use of the I_{ME} term corrects for known metering or computational errors.)
Request for Interchange	Project 2008-12 Coordinate Interchange	RFI	2/6/2014	6/30/2014	10/1/2014	A collection of data as defined in the NAESB Business Practice Standards submitted for the purpose of implementing bilateral Interchange between Balancing Authorities or an energy transfer within a single Balancing Authority.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Reserve Sharing Group	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	A group whose members consist of two or more Balancing Authorities that collectively maintain, allocate, and supply operating reserves required for each Balancing Authority's use in recovering from contingencies within the group. Scheduling energy from an Adjacent Balancing Authority to aid recovery need not constitute reserve sharing provided the transaction is ramped in over a period the supplying party could reasonably be expected to load generation in (e.g., ten minutes). If the transaction is ramped in quicker (e.g., between zero and ten minutes) then, for the purposes of disturbance control performance, the areas become a Reserve Sharing Group.
Reserve Sharing Group Reporting ACE	Project 2010-14.1 Phase 1		11/5/2015	1/19/2017	1/1/2018	At any given time of measurement for the applicable Reserve Sharing Group (RSG), the algebraic sum of the ACEs (or equivalent as calculated at such time of measurement) of the Balancing Authorities participating in the RSG at the time of measurement.
Resource Planner	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	The entity that develops a long-term (generally one year and beyond) plan for the resource adequacy of specific loads (customer demand and energy requirements) within a Planning Authority area.
Response Rate	Version 0 Reliability Standards		2/8/2005	3/16/2007		The Ramp Rate that a generating unit can achieve under normal operating conditions expressed in megawatts per minute (MW/Min).
Right-of-Way	Project 2010-07	ROW	5/9/2012	3/21/2013	7/1/2014	The corridor of land under a transmission line(s) needed to operate the line(s). The width of the corridor is established by engineering or construction standards as documented in either construction documents, pre-2007 vegetation maintenance records, or by the blowout standard in effect when the line was built. The ROW width in no case exceeds the applicable Transmission Owner's or applicable Generator Owner's legal rights but may be less based on the aforementioned criteria.
Scenario	Coordinate Operations		2/7/2006	3/16/2007		Possible event.
Schedule	Version 0 Reliability Standards		2/8/2005	3/16/2007		(Verb) To set up a plan or arrangement for an Interchange Transaction. (Noun) An Interchange Schedule.
Scheduled Frequency	Version 0 Reliability Standards		2/8/2005	3/16/2007		60.0 Hertz, except during a time correction.
Scheduled Net Interchange (NI _s)	Project 2010-14.2.1 Phase 2		2/11/2016		7/1/2016	The algebraic sum of all scheduled megawatt transfers, including Dynamic Schedules, to and from all Adjacent Balancing Authority areas within the same Interconnection, including the effect of scheduled ramps. Scheduled megawatt transfers on asynchronous DC tie lines directly connected to another Interconnection are excluded from Scheduled Net Interchange.
Scheduling Entity	Version 0 Reliability Standards		2/8/2005	3/16/2007		An entity responsible for approving and implementing Interchange Schedules.
Scheduling Path	Version 0 Reliability Standards		2/8/2005	3/16/2007		The Transmission Service arrangements reserved by the Purchasing-Selling Entity for a Transaction.
Sending Balancing Authority	Version 0 Reliability Standards		2/8/2005	3/16/2007		The Balancing Authority exporting the Interchange.
Sink Balancing Authority	Project 2008-12 Coordinate Interchange Standards		2/6/2014	6/30/2014	10/1/2014	The Balancing Authority in which the load (sink) is located for an Interchange Transaction and any resulting Interchange Schedule.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Source Balancing Authority	Project 2008-12 Coordinate Interchange Standards		2/6/2014	6/30/2014	10/1/2014	The Balancing Authority in which the generation (source) is located for an Interchange Transaction and for any resulting Interchange Schedule.
Special Protection System (Remedial Action Scheme)	Project 2010-05.2	SPS	5/5/2016	6/23/2016	4/1/2017	See "Remedial Action Scheme"
Spinning Reserve	Version 0 Reliability Standards		2/8/2005	3/16/2007		Unloaded generation that is synchronized and ready to serve additional demand.
Stability	Version 0 Reliability Standards		2/8/2005	3/16/2007		The ability of an electric system to maintain a state of equilibrium during normal and abnormal conditions or disturbances.
Stability Limit	Version 0 Reliability Standards		2/8/2005	3/16/2007		The maximum power flow possible through some particular point in the system while maintaining stability in the entire system or the part of the system to which the stability limit refers.
Supervisory Control and Data Acquisition	Version 0 Reliability Standards	SCADA	2/8/2005	3/16/2007		A system of remote control and telemetry used to monitor and control the transmission system.
Supplemental Regulation Service	Version 0 Reliability Standards		2/8/2005	3/16/2007		A method of providing regulation service in which the Balancing Authority providing the regulation service receives a signal representing all or a portion of the other Balancing Authority's ACE.
Surge	Version 0 Reliability Standards		2/8/2005	3/16/2007		A transient variation of current, voltage, or power flow in an electric circuit or across an electric system.
Sustained Outage	Project 2007-07 Transmission Vegetation Management		2/7/2006	3/16/2007		The deenergized condition of a transmission line resulting from a fault or disturbance following an unsuccessful automatic reclosing sequence and/or unsuccessful manual reclosing procedure.
System	Version 0 Reliability Standards		2/8/2005	3/16/2007		A combination of generation, transmission, and distribution components.
System Operating Limit	Project 2015-04 Alignment of Terms	SOL	11/5/2015	1/21/2016	7/1/2016	The value (such as MW, Mvar, amperes, frequency or volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to: <ul style="list-style-type: none"> • Facility Ratings (applicable pre- and post-Contingency Equipment Ratings or Facility Ratings) • transient stability ratings (applicable pre- and post- Contingency stability limits) • voltage stability ratings (applicable pre- and post-Contingency voltage stability) • system voltage limits (applicable pre- and post-Contingency voltage limits)
System Operator	Project 2010-01 Training		2/6/2014	6/19/2014	7/1/2016	An individual at a Control Center of a Balancing Authority, Transmission Operator, or Reliability Coordinator, who operates or directs the operation of the Bulk Electric System (BES) in Real-time.
Telemetry	Version 0 Reliability Standards		2/8/2005	3/16/2007		The process by which measurable electrical quantities from substations and generating stations are instantaneously transmitted to the control center, and by which operating commands from the control center are transmitted to the substations and generating stations.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Thermal Rating	Version 0 Reliability Standards		2/8/2005	3/16/2007		The maximum amount of electrical current that a transmission line or electrical facility can conduct over a specified time period before it sustains permanent damage by overheating or before it sags to the point that it violates public safety requirements.
Tie Line	Version 0 Reliability Standards		2/8/2005	3/16/2007		A circuit connecting two Balancing Authority Areas.
Tie Line Bias	Version 0 Reliability Standards		2/8/2005	3/16/2007		A mode of Automatic Generation Control that allows the Balancing Authority to 1.) maintain its Interchange Schedule and 2.) respond to Interconnection frequency error.
Time Error	Version 0 Reliability Standards		2/8/2005	3/16/2007		The difference between the Interconnection time measured at the Balancing Authority(ies) and the time specified by the National Institute of Standards and Technology. Time error is caused by the accumulation of Frequency Error over a given period.
Time Error Correction	Version 0 Reliability Standards		2/8/2005	3/16/2007		An offset to the Interconnection's scheduled frequency to return the Interconnection's Time Error to a predetermined value.
TLR (Transmission Loading Relief) Log (NERC added the spelled out term for TLR Log for clarification purposes.)	Version 0 Reliability Standards		2/8/2005	3/16/2007		Report required to be filed after every TLR Level 2 or higher in a specified format. The NERC IDC prepares the report for review by the issuing Reliability Coordinator. After approval by the issuing Reliability Coordinator, the report is electronically filed in a public area of the NERC Web site.
Total Flowgate Capability	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions	TFC	8/22/2008	11/24/2009		The maximum flow capability on a Flowgate, is not to exceed its thermal rating, or in the case of a flowgate used to represent a specific operating constraint (such as a voltage or stability limit), is not to exceed the associated System Operating Limit.
Total Internal Demand	Project 2010-04 Demand Data (MOD C)		5/6/2014	2/19/2015	7/1/2016	The Demand of a metered system, which includes the Firm Demand, plus any controllable and dispatchable DSM Load and the Load due to the energy losses incurred within the boundary of the metered system.
Total Transfer Capability	Version 0 Reliability Standards	TTC	2/8/2005	3/16/2007		The amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions.
Transaction	Version 0 Reliability Standards		2/8/2005	3/16/2007		See Interchange Transaction.
Transfer Capability	Version 0 Reliability Standards		2/8/2005	3/16/2007		The measure of the ability of interconnected electric systems to move or transfer power <i>in a reliable manner</i> from one area to another over all transmission lines (or paths) between those areas under specified system conditions. The units of transfer capability are in terms of electric power, generally expressed in megawatts (MW). The transfer capability from "Area A" to "Area B" is <i>not</i> generally equal to the transfer capability from "Area B" to "Area A."
Transfer Distribution Factor	Version 0 Reliability Standards		2/8/2005	3/16/2007		See Distribution Factor.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Transient Cyber Asset	Project 2016-02 Modifications to CIP Standards	TCA	2/9/2017	4/19/2018	1/1/2020	<p>A Cyber Asset that is:</p> <ol style="list-style-type: none"> 1. capable of transmitting or transferring executable code, 2. not included in a BES Cyber System, 3. not a Protected Cyber Asset (PCA) associated with high or medium impact BES Cyber Systems, and 4. directly connected (e.g., using Ethernet, serial, Universal Serial Bus, or wireless including near field or Bluetooth communication) for 30 consecutive calendar days or less to a: <ul style="list-style-type: none"> • BES Cyber Asset, • network within an Electronic Security Perimeter (ESP) containing high or medium impact BES Cyber Systems, or • PCA associated with high or medium impact BES Cyber Systems. <p>Examples of Transient Cyber Assets include, but are not limited to, Cyber Assets used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.</p>
Transmission	Version 0 Reliability Standards		2/8/2005	3/16/2007		An interconnected group of lines and associated equipment for the movement or transfer of electric energy between points of supply and points at which it is transformed for delivery to customers or is delivered to other electric systems.
Transmission Constraint	Version 0 Reliability Standards		2/8/2005	3/16/2007		A limitation on one or more transmission elements that may be reached during normal or contingency system operations.
Transmission Customer	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	<ol style="list-style-type: none"> 1. Any eligible customer (or its designated agent) that can or does execute a Transmission Service agreement or can or does receive Transmission Service. 2. Any of the following entities: Generator Owner, Load-Serving Entity, or Purchasing-Selling Entity.
Transmission Line	Project 2007-07 Transmission Vegetation Management		2/7/2006	3/16/2007		A system of structures, wires, insulators and associated hardware that carry electric energy from one point to another in an electric power system. Lines are operated at relatively high voltages varying from 69 kV up to 765 kV, and are capable of transmitting large quantities of electricity over long distances.
Transmission Operator	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	The entity responsible for the reliability of its "local" transmission system, and that operates or directs the operations of the transmission Facilities.
Transmission Operator Area	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions		8/22/2008	11/24/2009		The collection of Transmission assets over which the Transmission Operator is responsible for operating.
Transmission Owner	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	The entity that owns and maintains transmission Facilities.
Transmission Planner	Project 2015-04 Alignment of Terms		11/5/2015	1/21/2016	7/1/2016	The entity that develops a long-term (generally one year and beyond) plan for the reliability (adequacy) of the interconnected bulk electric transmission systems within its portion of the Planning Authority area.
Transmission Reliability Margin	Version 0 Reliability Standards		2/8/2005	3/16/2007		The amount of transmission transfer capability necessary to provide reasonable assurance that the interconnected transmission network will be secure. TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change.

SUBJECT TO ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Transmission Reliability Margin Implementation Document	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions		8/22/2008	11/24/2009		A document that describes the implementation of a Transmission Reliability Margin methodology, and provides information related to a Transmission Operator's calculation of TRM.
Transmission Service	Version 0 Reliability Standards		2/8/2005	3/16/2007		Services provided to the Transmission Customer by the Transmission Service Provider to move energy from a Point of Receipt to a Point of Delivery.
Transmission Service Provider	Project 2015-04 Alignment of Terms	TSP	11/5/2015	1/21/2016	7/1/2016	The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable Transmission Service agreements.
Undervoltage Load Shedding Program	Project 2008-02 Undervoltage Load Shedding & Underfrequency Load Shedding	UVLS Program	11/13/2014	11/19/2015	4/1/2017	An automatic load shedding program, consisting of distributed relays and controls, used to mitigate undervoltage conditions impacting the Bulk Electric System (BES), leading to voltage instability, voltage collapse, or Cascading. Centrally controlled undervoltage-based load shedding is not included.
Vegetation	Project 2007-07 Transmission Vegetation Management		2/7/2006	3/16/2007		All plant material, growing or not, living or dead.
Vegetation Inspection	Project 2010-07		5/9/2012	3/21/2013	7/1/2014	The systematic examination of vegetation conditions on a Right-of-Way and those vegetation conditions under the applicable Transmission Owner's or applicable Generator Owner's control that are likely to pose a hazard to the line(s) prior to the next planned maintenance or inspection. This may be combined with a general line inspection.
Wide Area	Version 0 Reliability Standards		2/8/2005	3/16/2007		The entire Reliability Coordinator Area as well as the critical flow and status information from adjacent Reliability Coordinator Areas as determined by detailed system studies to allow the calculation of Interconnected Reliability Operating Limits.
Year One	Project 2010-10 FAC Order 729		1/24/2011	11/17/2011		The first twelve month period that a Planning Coordinator or a Transmission Planner is responsible for assessing. For an assessment started in a given calendar year, Year One includes the forecasted peak Load period for one of the following two calendar years. For example, if a Planning Assessment was started in 2011, then Year One includes the forecasted peak Load period for either 2012 or 2013.

PENDING ENFORCEMENT						
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Definition
Cyber Security Incident	Project 2018-02 Modifications to CIP 008 Cyber Security Incident Reporting		2/7/2019	6/20/2019	1/1/2021	A malicious act or suspicious event that: - For a high or medium impact BES Cyber System, compromises or attempts to compromise (1) an Electronic Security Perimeter, (2) a Physical Security Perimeter, or (3) an Electronic Access Control or Monitoring System; or - Disrupts or attempts to disrupt the operation of a BES Cyber System.
Operational Planning Analysis	Project 2007-06.2 Phase 2 of System Protection Coordination	OPA	8/11/2016	6/7/2018	4/1/2021	An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to: load forecasts; generation output levels; Interchange; known Protection System and Remedial Action Scheme status or degradation, functions, and limitations; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.)
Protection System Coordination Study	Project 2007-06 System Protection Coordination		11/5/2015	6/7/2018	4/1/2021	An analysis to determine whether Protection Systems operate in the intended sequence during Faults.
Real-time Assessment	Project 2007-06.2 Phase 2 of System Protection Coordination	RTA	8/11/2016	6/8/2018	4/1/2021	An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load; generation output levels; known Protection System and Remedial Action Scheme status or degradation, functions, and limitations; Transmission outages; generator outages; Interchange; Facility Ratings; and identified phase angle and equipment limitations. (Realtime Assessment may be provided through internal systems or through third-party services.)
Reportable Cyber Security Incident	Project 2018-02 Modifications to CIP 008 Cyber Security Incident Reporting		2/7/2019	6/20/2019	1/1/2021	A Cyber Security Incident that compromised or disrupted: - A BES Cyber System that performs one or more reliability tasks of a functional entity; - An Electronic Security Perimeter of a high or medium impact BES Cyber System; or - An Electronic Access Control or Monitoring System of a high or medium impact BES Cyber System.

Retired Terms							
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Adjacent Balancing Authority	Version 0 Reliability Standards		2/8/2005	3/16/2007		9/30/2014	A Balancing Authority Area that is interconnected another Balancing Authority Area either directly or via a multi-party agreement or transmission tariff.
Adverse Reliability Impact	Project 2006-06		8/4/2011	NERC withdrew the related petition 3/18/2015.			The impact of an event that results in Bulk Electric System instability or Cascading.
Area Control Error	Version 0 Reliability Standards	ACE	2/8/2005	3/16/2007		3/31/2014	The instantaneous difference between a Balancing Authority's net actual and scheduled interchange, taking into account the effects of Frequency Bias and correction for meter error.
Arranged Interchange	Coordinate Interchange		5/2/2006	3/16/2007		9/30/2014	The state where the Interchange Authority has received the Interchange information (initial or revised).
ATC Path	Project 2006-07		8/22/2008	Not approved; Modification directed 11/24/2009			Any combination of Point of Receipt and Point of Delivery for which ATC is calculated; and any Posted Path. (See 18 CFR 37.6(b)(1))
Automatic Generation Control	Version 0 Reliability Standards	AGC	2/8/2005	3/16/2007		12/31/2018	Equipment that automatically adjusts generation in a Balancing Authority Area from a central location to maintain the Balancing Authority's interchange schedule plus Frequency Bias. AGC may also accommodate automatic inadvertent payback and time error correction.
Available Transfer Capability	Version 0 Reliability Standards	ATC	2/8/2005	3/16/2007			A measure of the transfer capability remaining in the physical transmission network for further commercial activity over and above already committed uses. It is defined as Total Transfer Capability less existing transmission commitments (including retail customer service), less a Capacity Benefit Margin, less a Transmission Reliability Margin.
Balancing Authority	Version 0 Reliability Standards	BA	2/8/2005	3/16/2007		12/31/2018	The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.
BES Cyber Asset	Project 2008-06		11/26/2012	11/22/2013		6/30/2016	A Cyber Asset that if rendered unavailable, degraded, or misused would, within 15 minutes of its required operation, misoperation, or non-operation, adversely impact one or more Facilities, systems, or equipment, which, if destroyed, degraded, or otherwise rendered unavailable when needed, would affect the reliable operation of the Bulk Electric System. Redundancy of affected Facilities, systems, and equipment shall not be considered when determining adverse impact. Each BES Cyber Asset is included in one or more BES Cyber Systems. (A Cyber Asset is not a BES Cyber Asset if, for 30 consecutive calendar days or less, it is directly connected to a network within an ESP, a Cyber Asset within an ESP, or to a BES Cyber Asset, and it is used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.)
Blackstart Capability Plan	Version 0 Reliability Standards		2/8/2005	3/16/2007		7/1/2013 Will be retired when EOP-005-2 becomes enforceable	A documented procedure for a generating unit or station to go from a shutdown condition to an operating condition delivering electric power without assistance from the electric system. This procedure is only a portion of an overall system restoration plan.
Blackstart Resource	Project 2006-03		8/5/2009	3/17/2011		6/30/2016	A generating unit(s) and its associated set of equipment which has the ability to be started without support from the System or is designed to remain energized without connection to the remainder of the System, with the ability to energize a bus, meeting the Transmission Operator's restoration plan needs for real and reactive power capability, frequency and voltage control, and that has been included in the Transmission Operator's restoration plan.

Retired Terms							Definition
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	
Bulk Electric System	Version 0 Reliability Standards	BES	2/8/2005	3/16/2007		6/30/2014	As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition.
Bulk Electric System (Continued)	Project 2010-17	BES	1/18/2012	6/14/2013		Replaced by BES definition FERC approved 3/20/2014	<p>I5 –Static or dynamic devices (excluding generators) dedicated to supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage of 100 kV or higher, or through a transformer that is designated in Inclusion I1.</p> <p>Exclusions:</p> <ul style="list-style-type: none"> • E1 - Radial systems: A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher and: <ul style="list-style-type: none"> a) Only serves Load. Or, b) Only includes generation resources, not identified in Inclusion I3, with an aggregate capacity less than or equal to 75 MVA (gross nameplate rating). Or, c) Where the radial system serves Load and includes generation resources, not identified in Inclusion I3, with an aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating). <p>Note – A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion.</p>
Bulk Electric System (Continued)	Project 2010-17	BES	1/18/2012	6/14/2013		Replaced by BES definition FERC approved 3/20/2014	<ul style="list-style-type: none"> • E2 - A generating unit or multiple generating units on the customer’s side of the retail meter that serve all or part of the retail Load with electric energy if: (i) the net capacity provided to the BES does not exceed 75 MVA, and (ii) standby, back-up, and maintenance power services are provided to the generating unit or multiple generating units or to the retail Load by a Balancing Authority, or provided pursuant to a binding obligation with a Generator Owner or Generator Operator, or under terms approved by the applicable regulatory authority. • E3 - Local networks (LN): A group of contiguous transmission Elements operated at or above 100 kV but less than 300 kV that distribute power to Load rather than transfer bulk power across the interconnected system. LN’s emanate from multiple points of connection at 100 kV or higher to improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system. The LN is characterized by all of the following:
Bulk Electric System (Continued)	Project 2010-17	BES	1/18/2012	6/14/2013		Replaced by BES definition FERC approved 3/20/2014	<ul style="list-style-type: none"> a) Limits on connected generation: The LN and its underlying Elements do not include generation resources identified in Inclusion I3 and do not have an aggregate capacity of non-retail generation greater than 75 MVA (gross nameplate rating); b) Power flows only into the LN and the LN does not transfer energy originating outside the LN for delivery through the LN; and c) Not part of a Flowgate or transfer path: The LN does not contain a monitored Facility of a permanent Flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection, or a comparable monitored Facility in the ERCOT or Quebec Interconnections, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL). • E4 – Reactive Power devices owned and operated by the retail customer solely for its own use. Note - Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.

Retired Terms							
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Bulk Electric System (FERC issued an order on April 18, 2013 approving the revised definition with an effective date of July 1, 2013. On June 14, 2013, FERC granted NERC's request to extend the effective date of the revised definition of the Bulk Electric System to July 1, 2014.)	Project 2010-17	BES	1/18/2012	6/14/2013		Replaced by BES definition FERC approved 3/20/2014	Unless modified by the lists shown below, all Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher. This does not include facilities used in the local distribution of electric energy. Inclusions: <ul style="list-style-type: none"> • I1 - Transformers with the primary terminal and at least one secondary terminal operated at 100 kV or higher unless excluded under Exclusion E1 or E3. • I2 - Generating resource(s) with gross individual nameplate rating greater than 20 MVA or gross plant/facility aggregate nameplate rating greater than 75 MVA including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above. • I3 - Blackstart Resources identified in the Transmission Operator's restoration plan. • I4 - Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a system designed primarily for aggregating capacity, connected at a common point at a voltage of 100 kV or above.
Bulk-Power System	Project 2012-08.1 Phase 1		5/9/2013	7/9/2013		6/30/2016	A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy.
Business Practices	Project 2006-07		8/22/2008	Not approved; Modification directed 11/24/2009			Those business rules contained in the Transmission Service Provider's applicable tariff, rules, or procedures; associated Regional Reliability Organization or regional entity business practices; or NAEBS Business Practices.
Cascading	Version 0 Reliability Standards		2/8/2005	3/16/2007		6/30/2016	The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread electric service interruption that cannot be restrained from sequentially spreading beyond an area predetermined by studies.
Cascading Outages	Determine Facility Ratings, Operating Limits, and Transfer Capabilities		11/1/2006 Withdrawn 2/12/2008			FERC Remanded 12/27/2007	The uncontrolled successive loss of Bulk Electric System Facilities triggered by an incident (or condition) at any location—resulting in the interruption of electric service that cannot be restrained from spreading beyond a pre-determined area.
Confirmed Interchange	Coordinate Interchange		5/2/2006	3/16/2007			The state where the Interchange Authority has verified the Arranged Interchange.
Contingency Reserve	Version 0 Reliability Standards		2/8/2005	3/16/2007		12/31/2017	The provision of capacity deployed by the Balancing Authority to meet the Disturbance Control Standard (DCS) and other NERC and Regional Reliability Organization contingency requirements.
Critical Assets	Cyber Security (Permanent)		5/2/2006	1/18/2008		6/30/2016	Facilities, systems, and equipment which, if destroyed, degraded, or otherwise rendered unavailable, would affect the reliability or operability of the Bulk Electric System.
Critical Cyber Assets	Cyber Security (Permanent)		5/2/2006	1/18/2008		6/30/2016	Cyber Assets essential to the reliable operation of Critical Assets.
Cyber Assets	Cyber Security (Permanent)		5/2/2006	1/18/2008		6/30/2016	Programmable electronic devices and communication networks including hardware, software, and data.

Retired Terms							
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Cyber Security Incident	Cyber Security (Permanent)		5/2/2006	1/18/2008		6/30/2016	Any malicious act or suspicious event that: <ul style="list-style-type: none"> • Compromises, or was an attempt to compromise, the Electronic Security Perimeter or Physical Security Perimeter of a Critical Cyber Asset, or, • Disrupts, or was an attempt to disrupt, the operation of a Critical Cyber Asset.
Demand-Side Management	Version 0 Reliability Standards	DSM	2/8/2005	3/16/2007		6/30/2016	The term for all activities or programs undertaken by Load-Serving Entity or its customers to influence the amount or timing of electricity they use.
Distribution Provider	Version 0 Reliability Standards		2/8/2005	3/16/2007		6/30/2016	Provides and operates the “wires” between the transmission system and the end-use customer. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the Distribution function at any voltage.
Dynamic Interchange Schedule or Dynamic Schedule	Version 0 Reliability Standards		2/8/2005	3/16/2007		9/30/2014	A telemetered reading or value that is updated in real time and used as a schedule in the AGC/ACE equation and the integrated value of which is treated as a schedule for interchange accounting purposes. Commonly used for scheduling jointly owned generation to or from another Balancing Authority Area.
Electronic Security Perimeter	Cyber Security (Permanent)	ESP	5/2/2006	1/18/2008		6/30/2016	The logical border surrounding a network to which Critical Cyber Assets are connected and for which access is controlled.
Element	Version 0 Reliability Standards		2/8/2005	3/16/2007		6/30/2016	Any electrical device with terminals that may be connected to other electrical devices such as a generator, transformer, circuit breaker, bus section, or transmission line. An element may be comprised of one or more components.
Energy Emergency	Version 0 Reliability Standards		2/8/2005	3/16/2007		3/31/2017	A condition when a Load-Serving Entity has exhausted all other options and can no longer provide its customers’ expected energy requirements.
Flowgate	Version 0 Reliability Standards		2/8/2005	3/16/2007			A designated point on the transmission system through which the Interchange Distribution Calculator calculates the power flow from Interchange Transactions.
Frequency Bias Setting	Version 0 Reliability Standards		2/8/2005	3/16/2007		3/31/2015	A value, usually expressed in MW/0.1 Hz, set into a Balancing Authority ACE algorithm that allows the Balancing Authority to contribute its frequency response to the interconnection.
Generator Operator		GOP	2/8/2005	3/16/2007		6/30/2016	The entity that operates generating unit(s) and performs the functions of supplying energy and Interconnected Operations Services.
Generator Owner		GO	2/8/2005	3/16/2007		6/30/2016	Entity that owns and maintains generating units.
Interchange Authority		IA	5/2/2006	3/16/2007		6/30/2016	The responsible entity that authorizes implementation of valid and balanced Interchange Schedules between Balancing Authority Areas, and ensures communication of Interchange information for reliability assessment purposes.
Interconnected Operations Service	Version 0 Reliability Standards		2/8/2005	3/16/2007			A service (exclusive of basic energy and transmission services) that is required to support the reliable operation of interconnected Bulk Electric Systems.
Interconnection	Version 0 Reliability Standards		2/8/2005	3/16/2007		6/30/2016	When capitalized, any one of the three major electric system networks in North America: Eastern, Western, and ERCOT.
Interconnection	Project 2010-14.1 Phase 1		8/15/2013	4/16/2015			When capitalized, any one of the four major electric system networks in North America: Eastern, Western, ERCOT and Quebec.
Interconnection Reliability Operating Limit	Version 0 Reliability Standards	IROL	2/8/2005	3/16/2007		12/27/2007	The value (such as MW, MVar, Amperes, Frequency or Volts) derived from, or a subset of the System Operating Limits, which if exceeded, could expose a widespread area of the Bulk Electric System to instability, uncontrolled separation(s) or cascading outages.

Retired Terms							
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Intermediate Balancing Authority	Version 0 Reliability Standards		2/8/2005	3/16/2007			A Balancing Authority Area that has connecting facilities in the Scheduling Path between the Sending Balancing Authority Area and Receiving Balancing Authority Area and operating agreements that establish the conditions for the use of such facilities.
Load-Serving Entity	Version 0 Reliability Standards		2/8/2005	3/16/2007			Secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.
Low Impact BES Cyber System Electronic Access Point	Project 2014-02	LEAP	2/12/2015	1/21/2016	7/1/2016	12/31/2019	A Cyber Asset interface that controls Low Impact External Routable Connectivity. The Cyber Asset containing the LEAP may reside at a location external to the asset or assets containing low impact BES Cyber Systems.
Low Impact External Routable Connectivity	Project 2014-02	LERC	2/12/2015	1/21/2016	7/1/2016	12/31/2019	Direct user-initiated interactive access or a direct device-to-device connection to a low impact BES Cyber System(s) from a Cyber Asset outside the asset containing those low impact BES Cyber System(s) via a bi-directional routable protocol connection. Point-to-point communications between intelligent electronic devices that use routable communication protocols for time-sensitive protection or control functions between Transmission station or substation assets containing low impact BES Cyber Systems are excluded from this definition (examples of this communication include, but are not limited to, IEC 61850 GOOSE or vendor proprietary protocols).
Misoperation	Phase III - IV Planning Standards Archive		2/7/2006	3/16/2007		6/30/2016	<ul style="list-style-type: none"> Any failure of a Protection System element to operate within the specified time when a fault or abnormal condition occurs within a zone of protection. Any operation for a fault not within a zone of protection (other than operation as backup protection for a fault in an adjacent zone that is not cleared within a specified time for the protection for that zone). Any unintentional Protection System operation when no fault or other abnormal condition has occurred unrelated to on-site maintenance and testing activity.
Operational Planning Analysis	Operate Within Interconnection Reliability Operating Limits		10/17/2008	3/17/2011		9/30/2014	An analysis of the expected system conditions for the next day's operation. (That analysis may be performed either a day ahead or as much as 12 months ahead.) Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).
Operational Planning Analysis	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	12/31/2016	An analysis of the expected system conditions for the next day's operation. (That analysis may be performed either a day ahead or as much as 12 months ahead.) Expected system conditions include things such as load forecast(s), generation output levels, Interchange, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).
Physical Security Perimeter	Cyber Security (Permanent)	PSP	5/2/2006	1/18/2008		6/30/2016	The physical, completely enclosed ("six-wall") border surrounding computer rooms, telecommunications rooms, operations centers, and other locations in which Critical Cyber Assets are housed and for which access is controlled.
Planning Authority	Version 0 Reliability Standards	PA	2/8/2005	3/16/2007			The responsible entity that coordinates and integrates transmission facility and service plans, resource plans, and protection systems.
Point of Receipt	Version 0 Reliability Standards	POR	2/8/2005	3/16/2007		6/30/2016	A location that the Transmission Service Provider specifies on its transmission system where an Interchange Transaction enters or a Generator delivers its output.
Postback	Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions		8/22/2008	Not approved; Modification directed 11/24/09			Positive adjustments to ATC or AFC as defined in Business Practices. Such Business Practices may include processing of redirects and unscheduled service.

Retired Terms							
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Protected Cyber Assets	Project 2008-06 Cyber Security Order 706	PCA	11/26/2012	11/22/2013		6/30/2016	One or more Cyber Assets connected using a routable protocol within or on an Electronic Security Perimeter that is not part of the highest impact BES Cyber System within the same Electronic Security Perimeter. The impact rating of Protected Cyber Assets is equal to the highest rated BES Cyber System in the same ESP. A Cyber Asset is not a Protected Cyber Asset if, for 30 consecutive calendar days or less, it is connected either to a Cyber Asset within the ESP or to the network within the ESP, and it is used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.
Protection System	Phase III-IV Planning Standards Archive		2/7/2006	3/17/2007		4/1/2013	Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry.
Protection System Maintenance Program (PRC-005-2)	Project 2007-17 Protection System Maintenance and Testing	PSMP	11/7/2012	12/19/2013		4/1/2015	An ongoing program by which Protection System components are kept in working order and proper operation of malfunctioning components is restored. A maintenance program for a specific component includes one or more of the following activities: Verify — Determine that the component is functioning correctly. Monitor — Observe the routine in-service operation of the component. Test — Apply signals to a component to observe functional performance or output behavior, or to diagnose problems. Inspect — Examine for signs of component failure, reduced performance or degradation. Calibrate — Adjust the operating threshold or measurement accuracy of a measuring element to meet the intended performance requirement.
Protection System Maintenance Program (PRC-005-3)	Project 2007-17.2 Protection System Maintenance and Testing - Phase 2	PSMP	11/7/2013	1/22/2015	4/1/2016		An ongoing program by which Protection System and automatic reclosing components are kept in working order and proper operation of malfunctioning components is restored. A maintenance program for a specific component includes one or more of the following activities: Verify — Determine that the component is functioning correctly. Monitor — Observe the routine in-service operation of the component. Test — Apply signals to a component to observe functional performance or output behavior, or to diagnose problems. Inspect — Examine for signs of component failure, reduced performance or degradation. Calibrate — Adjust the operating threshold or measurement accuracy of a measuring element to meet the intended performance requirement.

Retired Terms							
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Protection System Maintenance Program (PRC-005-4)	Project 2014-01 Standards Applicability for Dispersed Generation Resources	PSMP	11/13/2014	9/17/2015	1/1/2016		An ongoing program by which Protection System, Automatic Reclosing, and Sudden Pressure Relaying Components are kept in working order and proper operation of malfunctioning Components is restored. A maintenance program for a specific Component includes one or more of the following activities: <ul style="list-style-type: none"> • Verify — Determine that the Component is functioning correctly. • Monitor — Observe the routine in-service operation of the Component. • Test — Apply signals to a Component to observe functional performance or output behavior, or to diagnose problems. • Inspect — Examine for signs of Component failure, reduced performance or degradation. • Calibrate — Adjust the operating threshold or measurement accuracy of a measuring element to meet the intended performance requirement.
Pseudo-Tie	Version 0 Reliability Standards		2/8/2005	3/16/2007			A telemetered reading or value that is updated in real time and used as a “virtual” tie line flow in the AGC/ACE equation but for which no physical tie or energy metering actually exists. The integrated value is used as a metered MWh value for interchange accounting purposes.
Pseudo-Tie	Project 2008-12		2/6/2014	6/30/2014	10/1/2014	12/31/2018	A time-varying energy transfer that is updated in Real-time and included in the Actual Net Interchange term (NIA) in the same manner as a Tie Line in the affected Balancing Authorities’ control ACE equations (or alternate control processes).
Reactive Power	Version 0 Reliability Standards		2/8/2005	3/16/2007		6/30/2016	The portion of electricity that establishes and sustains the electric and magnetic fields of alternating-current equipment. Reactive power must be supplied to most types of magnetic equipment, such as motors and transformers. It also must supply the reactive losses on transmission facilities. Reactive power is provided by generators, synchronous condensers, or electrostatic equipment such as capacitors and directly influences electric system voltage. It is usually expressed in kilovars (kvar) or megavars (Mvar).
Real Power	Version 0 Reliability Standards		2/8/2005	3/16/2007			The portion of electricity that supplies energy to the load.
Reallocation	Version 0 Reliability Standards		2/8/2005	3/16/2007			The total or partial curtailment of Transactions during TLR Level 3a or 5a to allow Transactions using higher priority to be implemented.
Real-time Assessment	Operate Within Interconnection Reliability Operating Limits		10/17/2008	3/17/2011		12/31/2016	An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data
Reliability Coordinator	Version 0 Reliability Standards	RC	2/8/2005	3/16/2007		6/30/2007	The entity that is the highest level of authority who is responsible for the reliable operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of Interconnection Reliability Operating Limits, which may be based on the operating parameters of transmission systems beyond any Transmission Operator’s vision.
Reliability Directive	Project 2006-06 Reliability Coordination		8/16/2012	11/19/2015		11/19/2015	A communication initiated by a Reliability Coordinator, Transmission Operator, or Balancing Authority where action by the recipient is necessary to address an Emergency or Adverse Reliability Impact.

Retired Terms							
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Reliability Standard	Project 2012-08.1 Phase 1 of Glossary Updates: Statutory Definitions		5/9/2013	7/9/2013		6/30/2016	A requirement, approved by the United States Federal Energy Regulatory Commission under this Section 215 of the Federal Power Act, or approved or recognized by an applicable governmental authority in other jurisdictions, to provide for reliable operation [Reliable Operation] of the bulk-power system [Bulk-Power System]. The term includes requirements for the operation of existing bulk-power system [Bulk-Power System] facilities, including cybersecurity protection, and the design of planned additions or modifications to such facilities to the extent necessary to provide for reliable operation [Reliable Operation] of the bulk-power system [Bulk-Power System], but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.
Reliable Operation	Project 2012-08.1 Phase 1 of Glossary Updates: Statutory Definitions		5/9/2013	7/9/2013		6/30/2016	Operating the elements of the bulk-power system [Bulk-Power System] within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure of system elements.
Remedial Action Scheme	Version 0 Reliability Standards	RAS	2/8/2005	3/16/2007		3/31/2017	See "Special Protection System"
Removable Media	Project 2014-02		2/12/2015	1/21/2016	7/1/2016	12/31/2019	Storage media that (i) are not Cyber Assets, (ii) are capable of transferring executable code, (iii) can be used to store, copy, move, or access data, and (iv) are directly connected for 30 consecutive calendar days or less to a BES Cyber Asset, a network within an ESP, or a Protected Cyber Asset. Examples include, but are not limited to, floppy disks, compact disks, USB flash drives, external hard drives, and other flash memory cards/drives that contain nonvolatile memory.
Reporting Ace			8/15/2013	4/16/2015 (Will not go into effect)			The scan rate values of a Balancing Authority's Area Control Error (ACE) measured in MW, which includes the difference between the Balancing Authority's Net Actual Interchange and its Net Scheduled Interchange, plus its Frequency Bias obligation, plus any known meter error. In the Western Interconnection, Reporting ACE includes Automatic Time Error Correction (ATEC). Reporting ACE is calculated as follows: Reporting ACE = $(NI_A - NI_S) - 10B (F_A - F_S) - I_{ME}$ Reporting ACE is calculated in the Western Interconnection as follows: Reporting ACE = $(NI_A - NI_S) - 10B (F_A - F_S) - I_{ME} + I_{ATEC}$ Where: NI_A (Actual Net Interchange) is the algebraic sum of actual megawatt transfers across all Tie Lines and includes Pseudo-Ties. Balancing Authorities directly connected via asynchronous ties to another Interconnection may include or exclude megawatt transfers on those Tie lines in their actual interchange, provided they are implemented in the same manner for Net Interchange Schedule. NI_S (Scheduled Net Interchange) is the algebraic sum of all scheduled megawatt transfers, including Dynamic Schedules, with adjacent Balancing Authorities, and taking into account the effects of schedule ramps. Balancing Authorities directly connected via asynchronous ties to another Interconnection may include or exclude megawatt transfers on those Tie Lines in their scheduled Interchange, provided they are implemented in the same manner for Net Interchange Actual.

Retired Terms							Definition
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Reporting Ace (Continued)			8/15/2013	4/16/2015 (Will not go into effect)			<p>B (Frequency Bias Setting) is the Frequency Bias Setting (in negative MW/0.1 Hz) for the Balancing Authority.</p> <p>10 is the constant factor that converts the frequency bias setting units to MW/Hz.</p> <p>F_A (Actual Frequency) is the measured frequency in Hz.</p> <p>F_S (Scheduled Frequency) is 60.0 Hz, except during a time correction.</p> <p>I_{ME} (Interchange Meter Error) is the meter error correction factor and represents the difference between the integrated hourly average of the net interchange actual (NIA) and the cumulative hourly net Interchange energy measurement (in megawatt-hours).</p> <p>I_{ATEC} (Automatic Time Error Correction) is the addition of a component to the ACE equation for the Western Interconnection that modifies the control point for the purpose of continuously paying back Primary Inadvertent Interchange to correct accumulated time error. Automatic Time Error Correction is only applicable in the Western Interconnection.</p> <p>ATEC shall be zero when operating in any other AGC mode.</p> <ul style="list-style-type: none"> • $Y = B / BS$. • H = Number of hours used to pay back Primary Inadvertent Interchange when operating in Automatic Time Error Correction control mode. The value of H is set to 3. • BS = Frequency Bias for the
Reporting Ace (Continued)							<p>energy. The value of H is set to 3.</p> <p>B_S = Frequency Bias for the Interconnection (MW / 0.1 Hz).</p> <ul style="list-style-type: none"> • Primary Inadvertent Interchange (PI_{hourly}) is $(1-Y) * (I_{actual} - B * \Delta TE/6)$ • I_{actual} is the hourly Inadvertent Interchange for the last hour. • ΔTE is the hourly change in system Time Error as distributed by the Interconnection Time Monitor. Where: $\Delta TE = TE_{end\ hour} - TE_{begin\ hour} - TD_{adj} - (t) * (TE_{offset})$ • TD_{adj} is the Reliability Coordinator adjustment for differences with Interconnection Time Monitor control center clocks. • t is the number of minutes of Manual Time Error Correction that occurred during the hour. • TE_{offset} is 0.000 or +0.020 or -0.020. • PI_{accum} is the Balancing Authority's accumulated PI_{hourly} in MWh. An On-Peak and Off-Peak accumulation accounting is required. <p>Where:</p> <p>All NERC Interconnections with multiple Balancing Authorities operate using the principles of Tie-line Bias (TLB) Control and require the use of an ACE equation similar to the Reporting ACE defined above. Any modification(s) to this specified Reporting ACE equation that is(are) implemented for all areas of an interconnection and is(are) consistent with the following four principles will provide a valid alternative Reporting ACE equation</p>
Reporting Ace (Continued)			8/15/2013	4/16/2015 (Will not go into effect)			<p>All NERC Interconnections with multiple Balancing Authorities operate using the principles of Tie-line Bias (TLB) Control and require the use of an ACE equation similar to the Reporting ACE defined above. Any modification(s) to this specified Reporting ACE equation that is(are) implemented for all Balancing Authorities on an interconnection and is(are) consistent with the following four principles will provide a valid alternative Reporting ACE equation consistent with the measures included in this standard.</p> <ol style="list-style-type: none"> 1. All portions of the Interconnection are included in one area or another so that the sum of all area generation, loads and losses is the same as total system generation, load and losses. 2. The algebraic sum of all area Net Interchange Schedules and all Net Interchange actual values is equal to zero at all times. 3. The use of a common Scheduled Frequency FS for all areas at all times. 4. The absence of metering or computational errors. (The inclusion and use of the IME term to account for known metering or computational errors.)
Request for Interchange	Coordinate Interchange	RFI	5/2/2006	3/16/2007			A collection of data as defined in the NAESB RFI Datasheet, to be submitted to the Interchange Authority for the purpose of implementing bilateral Interchange between a Source and Sink Balancing Authority.

Retired Terms							
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Reserve Sharing Group	Version 0 Reliability Standards	RSG	2/8/2005	3/16/2007		6/30/2016	A group whose members consist of two or more Balancing Authorities that collectively maintain, allocate, and supply operating reserves required for each Balancing Authority's use in recovering from contingencies within the group. Scheduling energy from an Adjacent Balancing Authority to aid recovery need not constitute reserve sharing provided the transaction is ramped in over a period the supplying party could reasonably be expected to load generation in (e.g., ten minutes). If the transaction is ramped in quicker (e.g., between zero and ten minutes) then, for the purposes of Disturbance Control Performance, the Areas become a Reserve Sharing Group.
Reserve Sharing Group Reporting ACE	Project 2010-14.1 Phase 1		8/15/2013	4/16/2015		12/31/2017	At any given time of measurement for the applicable Reserve Sharing Group, the algebraic sum of the Reporting ACEs (or equivalent as calculated at such time of measurement) of the Balancing Authorities participating in the Reserve Sharing Group at the time of measurement.
Resource Planner	Version 0 Reliability Standards	RP	2/8/2005	3/16/2007			The entity that develops a long-term (generally one year and beyond) plan for the resource adequacy of specific loads (customer demand and energy requirements) within a Planning Authority Area.
Right-of-Way	Project 2007-07	ROW	2/7/2006	3/16/2007			A corridor of land on which electric lines may be located. The Transmission Owner may own the land in fee, own an easement, or have certain franchise, prescription, or license rights to construct and maintain lines.
Right-of-Way	Project 2007-07	ROW	11/3/2011	3/21/2013		6/30/2014	The corridor of land under a transmission line(s) needed to operate the line(s). The width of the corridor is established by engineering or construction standards as documented in either construction documents, pre-2007 vegetation maintenance records, or by the blowout standard in effect when the line was built. The ROW width in no case exceeds the Transmission Owner's legal rights but may be less based on the aforementioned criteria.
Sink Balancing Authority	Version 0 Reliability Standards		2/8/2005	3/16/2007		9/30/2014	The Balancing Authority in which the load (sink) is located for an Interchange Transaction. (This will also be a Receiving Balancing Authority for the resulting Interchange Schedule.)
Source Balancing Authority	Version 0 Reliability Standards		2/8/2005	3/16/2007		9/30/2014	The Balancing Authority in which the generation (source) is located for an Interchange Transaction. (This will also be a Sending Balancing Authority for the resulting Interchange Schedule.)
Special Protection System (Remedial Action Scheme)	Version 0 Reliability Standards	SPS	2/8/2005	3/16/2007 (Becomes inactive 3/31/2017)		3/31/2017	An automatic protection system designed to detect abnormal or predetermined system conditions, and take corrective actions other than and/or in addition to the isolation of faulted components to maintain system reliability. Such action may include changes in demand, generation (MW and Mvar), or system configuration to maintain system stability, acceptable voltage, or power flows. An SPS does not include (a) underfrequency or undervoltage load shedding or (b) fault conditions that must be isolated or (c) out-of-step relaying (not designed as an integral part of an SPS). Also called Remedial Action Scheme.

Retired Terms							
Continent-wide Term	Link to Project Page	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
System Operating Limit	Version 0 Reliability Standards	SOL	2/8/2005	3/16/2007		6/30/2014	The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to: <ul style="list-style-type: none"> • Facility Ratings (Applicable pre- and post-Contingency equipment or facility ratings) • Transient Stability Ratings (Applicable pre- and post-Contingency Stability Limits) • Voltage Stability Ratings (Applicable pre- and post-Contingency Voltage Stability) • System Voltage Limits (Applicable pre- and post-Contingency Voltage Limits)
System Operator	Version 0 Reliability Standards		2/8/2005	3/16/2007		6/30/2016	An individual at a control center (Balancing Authority, Transmission Operator, Generator Operator, Reliability Coordinator) whose responsibility it is to monitor and control that electric system in real time.
Transient Cyber Asset	Project 2014-02		2/12/2015	1/21/2016	7/1/2016		A Cyber Asset that (i) is capable of transmitting or transferring executable code, (ii) is not included in a BES Cyber System, (iii) is not a Protected Cyber Asset (PCA), and (iv) is directly connected (e.g., using Ethernet, serial, Universal Serial Bus, or wireless, including near field or Bluetooth communication) for 30 consecutive calendar days or less to a BES Cyber Asset, a network within an ESP, or a PCA. Examples include, but are not limited to, Cyber Assets used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.

NPCC REGIONAL DEFINITIONS							
NPCC Regional Term	Link to Implementation Plan	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Current Zero Time	PRC-002-NPCC-1 Implementation Plan		11/4/2010	10/20/2011	10/20/2013		The time of the final current zero on the last phase to interrupt.
Generating Plant	PRC-002-NPCC-1 Implementation Plan		11/4/2010	10/20/2011	10/20/2013		One or more generators at a single physical location whereby any single contingency can affect all the generators at that location.

RELIABILITYFIRST REGIONAL DEFINITIONS							
RELIABILITYFIRST Regional Term	Link to FERC Order	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Resource Adequacy	BAL-502-RFC-02 Implementation Plan		8/5/2009	3/17/2011			The ability of supply-side and demand-side resources to meet the aggregate electrical demand (including losses)
Net Internal Demand	BAL-502-RFC-02 Implementation Plan		8/5/2009	3/17/2011			Total of all end-use customer demand and electric system losses within specified metered boundaries, less Direct Control Management and Interruptible Demand
Peak Period	BAL-502-RFC-02 Implementation Plan		8/5/2009	3/17/2011			A period consisting of two (2) or more calendar months but less than seven (7) calendar months, which includes the period during which the responsible entity's annual peak demand is expected to occur
Wind Generating Station	BAL-502-RFC-02 Implementation Plan		11/3/2011 (Board withdrew approval 11/7/2012)	3/17/2011			A collection of wind turbines electrically connected together and injecting energy into the grid at one point, sometimes known as a "Wind Farm."
Year One	BAL-502-RFC-02 Implementation Plan		8/5/2009	3/17/2011			The planning year that begins with the upcoming annual Peak Period

TEXAS RE REGIONAL DEFINITIONS

Frequency Measurable Event	BAL-001-TRE-1 Implementation Plan	FME	8/15/2013	1/16/2014	4/1/2014	An event that results in a Frequency Deviation, identified at the BA's sole discretion, and meeting one of the following conditions: i) a Frequency Deviation that has a pre-perturbation [the 16-second period of time before t(0)] average frequency to post-perturbation [the 32-second period of time starting 20 seconds after t(0)] average frequency absolute deviation greater than 100 mHz (the 100 mHz value may be adjusted by the BA to capture 30 to 40 events per year). Or ii) a cumulative change in generating unit/generating facility, DC tie and/or firm load pre-perturbation megawatt value to post-perturbation megawatt value absolute deviation greater than 550 MW (the 550 MW value may be adjusted by the BA to capture 30 to 40 events per year).
Governor			8/15/2013	1/16/2014	4/1/2014	The electronic, digital or mechanical device that implements Primary Frequency Response of generating units/generating facilities or other system elements.
Primary Frequency Response	BAL-001-TRE-1 Implementation Plan	PFR	8/15/2013	1/16/2014	4/1/2014	The immediate proportional increase or decrease in real power output provided by generating units/generating facilities and the natural real power dampening response provided by Load in response to system Frequency Deviations. This response is in the direction that stabilizes frequency.

WECC REGIONAL DEFINITIONS							
WECC Regional Term	WECC Standards Under Development	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Area Control Error *	WECC Regional Standards Under Development	ACE	3/12/2007	6/8/2007		3/31/2014	Means the instantaneous difference between net actual and scheduled interchange, taking into account the effects of Frequency Bias including correction for meter error.
Automatic Generation Control *	WECC Regional Standards Under Development	AGC	3/12/2007	6/8/2007			Means equipment that automatically adjusts a Control Area's generation from a central location to maintain its interchange schedule plus Frequency Bias.
Automatic Time Error Correction	WECC Regional Standards Under Development		3/26/2008	5/21/2009		3/31/2014	A frequency control automatic action that a Balancing Authority uses to offset its frequency contribution to support the Interconnection's scheduled frequency.
Automatic Time Error Correction	WECC Regional Standards Under Development		12/19/2012	10/16/2013	4/1/2014		The addition of a component to the ACE equation that modifies the control point for the purpose of continuously paying back Primary Inadvertent Interchange to correct accumulated time error.
Average Generation *	WECC Regional Standards Under Development		3/12/2007	6/8/2007			Means the total MWh generated within the Balancing Authority Operator's Balancing Authority Area during the prior year divided by 8760 hours (8784 hours if the prior year had 366 days).

Business Day *	WECC Regional Standards Under Development		3/12/2007	6/8/2007			Means any day other than Saturday, Sunday, or a legal public holiday as designated in section 6103 of title 5, U.S. Code.
Commercial Operation	WECC Regional Standards Under Development		10/29/2008	4/21/2011			Achievement of this designation indicates that the Generator Operator or Transmission Operator of the synchronous generator or synchronous condenser has received all approvals necessary for operation after completion of initial start-up testing.
Contributing Schedule	WECC Regional Standards Under Development		2/10/2009	3/17/2011		9/30/2019	A Schedule not on the Qualified Transfer Path between a Source Balancing Authority and a Sink Balancing Authority that contributes unscheduled flow across the Qualified Transfer Path.
Dependability-Based Misoperation	WECC Regional Standards Under Development		10/29/2008	4/21/2011			Is the absence of a Protection System or RAS operation when intended. Dependability is a component of reliability and is the measure of a device's certainty to operate when required.
Disturbance *	WECC Regional Standards Under Development		3/12/2007	6/8/2007		Retired	Means (i) any perturbation to the electric system, or (ii) the unexpected change in ACE that is caused by the sudden loss of generation or interruption of load.
Extraordinary Contingency†	WECC Regional Standards Under Development		3/12/2007	6/8/2007			Shall have the meaning set out in Excuse of Performance, section B.4.c. language in section B.4.c: <i>means any act of God, actions by a non-affiliated third party, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, earthquake, explosion, accident to or breakage, failure or malfunction of machinery or equipment, or any other cause beyond the Reliability Entity's reasonable control; provided that prudent industry standards (e.g. maintenance, design, operation) have been employed; and provided further that no act or cause shall be considered an Extraordinary Contingency if such act or cause results in any contingency contemplated in any WECC Reliability Standard (e.g., the "Most Severe Single Contingency" as defined in the WECC Reliability Criteria or any lesser contingency).</i>

WECC REGIONAL DEFINITIONS							
WECC Regional Term	WECC Standards Under Development	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Frequency Bias *	WECC Regional Standards Under Development		3/12/2007	6/8/2007			Means a value, usually given in megawatts per 0.1 Hertz, associated with a Control Area that relates the difference between scheduled and actual frequency to the amount of generation required to correct the difference.

Functionally Equivalent Protection System	WECC Regional Standards Under Development	FEPS	10/29/2008	4/21/2011			A Protection System that provides performance as follows: <ul style="list-style-type: none"> • Each Protection System can detect the same faults within the zone of protection and provide the clearing times and coordination needed to comply with all Reliability Standards. • Each Protection System may have different components and operating characteristics.
Functionally Equivalent RAS	WECC Regional Standards Under Development	FERAS	10/29/2008	4/21/2011			A Remedial Action Scheme ("RAS") that provides the same performance as follows: <ul style="list-style-type: none"> • Each RAS can detect the same conditions and provide mitigation to comply with all Reliability Standards. • Each RAS may have different components and operating characteristics.
Generating Unit Capability *	WECC Regional Standards Under Development		3/12/2007	6/8/2007			Means the MVA nameplate rating of a generator.
Non-spinning Reserve†	WECC Regional Standards Under Development		3/12/2007	6/8/2007		Retired	Means that Operating Reserve not connected to the system but capable of serving demand within a specified time, or interruptible load that can be removed from the system in a specified time.
Normal Path Rating *	WECC Regional Standards Under Development		3/12/2007	6/8/2007			Is the maximum path rating in MW that has been demonstrated to WECC through study results or actual operation, whichever is greater. For a path with transfer capability limits that vary seasonally, it is the maximum of all the seasonal values.
Operating Reserve *	WECC Regional Standards Under Development		3/12/2007	6/8/2007			Means that capability above firm system demand required to provide for regulation, load-forecasting error, equipment forced and scheduled outages and local area protection. Operating Reserve consists of Spinning Reserve and Nonspinning Reserve.
Operating Transfer Capability Limit *	WECC Regional Standards Under Development	OTC	3/12/2007	6/8/2007			Means the maximum value of the most critical system operating parameter(s) which meets: (a) precontingency criteria as determined by equipment loading capability and acceptable voltage conditions, (b) transient criteria as determined by equipment loading capability and acceptable voltage conditions, (c) transient performance criteria, and (d) post-contingency loading and voltage criteria.
Primary Inadvertent Interchange	WECC Regional Standards Under Development		3/26/2008	5/21/2009			The component of area (n) inadvertent interchange caused by the regulating deficiencies of the area (n).
Qualified Controllable Device	WECC Regional Standards Under Development		2/10/2009	3/17/2011		9/30/2019	A controllable device installed in the Interconnection for controlling energy flow and the WECC Operating Committee has approved using the device for controlling the USF on the Qualified Transfer Paths.
Qualified Path	WECC Regional Standards Under Development		2/7/2019	5/10/2019	10/1/2019		A transmission element, or group of transmission elements that has qualified for inclusion into the Western Interconnection Unscheduled Flow Mitigation Plan (WIUFMP).
Qualified Transfer Path	WECC Regional Standards Under Development		2/10/2009	3/17/2011		9/30/2019	A transfer path designated by the WECC Operating Committee as being qualified for WECC unscheduled flow mitigation.
Qualified Transfer Path Curtailment Event	WECC Regional Standards Under Development		2/10/2009	3/17/2011		9/30/2019	Each hour that a Transmission Operator calls for Step 4 or higher for one or more consecutive hours (See Attachment 1 IRO-006-WECC-1) during which the curtailment tool is functional.

WECC REGIONAL DEFINITIONS							
WECC Regional Term	WECC Standards Under Development	Acronym	BOT Adoption Date	FERC Approval Date	Effective Date	Inactive Date	Definition
Relief Requirement	WECC Regional Standards Under Development		2/10/2009	3/17/2011		6/30/2014	The expected amount of the unscheduled flow reduction on the Qualified Transfer Path that would result by curtailing each Sink Balancing Authority's Contributing Schedules by the percentages listed in the columns of WECC Unscheduled Flow Mitigation Summary of Actions Table in Attachment 1 WECC IRO-006-WECC-1.
Relief Requirement	WECC Regional Standards Under Development		2/7/2013	6/13/2014	7/1/2014	9/30/2019	The expected amount of the unscheduled flow reduction on the Qualified Transfer Path that would result by curtailing each Sink Balancing Authority's Contributing Schedules by the percentages determined in the WECC unscheduled flow mitigation guideline .
Secondary Inadvertent Interchange	WECC Regional Standards Under Development		3/26/2008	5/21/2009			The component of area (n) inadvertent interchange caused by the regulating deficiencies of area (i).
Security-Based Misoperation	WECC Regional Standards Under Development		10/29/2008	4/21/2011			A Misoperation caused by the incorrect operation of a Protection System or RAS. Security is a component of reliability and is the measure of a device's certainty not to operate falsely.
Spinning Reserve†	WECC Regional Standards Under Development		3/12/2007	6/8/2007		Retired	Means unloaded generation which is synchronized and ready to serve additional demand. It consists of Regulating reserve and Contingency reserve (as each are described in Sections B.a.i and ii).
Transfer Distribution Factor	WECC Regional Standards Under Development	TDF	2/10/2009	3/17/2011		9/30/2019	The percentage of USF that flows across a Qualified Transfer Path when an Interchange Transaction (Contributing Schedule) is implemented. [See the WECC Unscheduled Flow Mitigation Summary of Actions Table (Attachment 1 WECC IRO-006-WECC-1).]
WECC Table 2 *	WECC Regional Standards Under Development		3/12/2007	6/8/2007			Means the table maintained by the WECC identifying those transfer paths monitored by the WECC regional Reliability coordinators. As of the date set out therein, the transmission paths identified in Table 2 are as listed in Attachment A to this Standard.

† FERC approved the WECC Tier One Reliability Standards in the Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications, 119 FERC ¶ 61,260 (June 8, 2007). In that Order, FERC directed WECC to address the inconsistencies between the regional definitions and the NERC Glossary in developing permanent replacement standards. The replacement standards designed to address the shortcomings were filed with FERC in 2009.

CHANGE HISTORY	
Date	Action
10/8/2020	Retired; moved to the Retired Terms tab. 1. Automatic Generation Control 2. Balancing Authority 3. Pseudo-Tie
5/29/2020	Updated effective date for Operational Planning Analysis (OPA), Protections System Coordination Study and Real-time Assessment (RTA) to 4/21/2021 per FERC/s April 17th Order extending effective dates due to COVID-19.
2/24/2020	Added inactive Date to Qualified Transfer Path Curtailment Event, Contributing Schedule, Qualified Controllable Device, Relief Requirement and Transfer Distribution Factor.
1/2/2020	Effective; moved to the Subject to Enforcement tab: 1. Definition of Transient Cyber Asset (TCA) 2. Definition of Removable Media
1/2/2020	Retired; moved to the Retired Terms tab. 1. Low Impact BES Cyber System Electronic Access Point (LEAP) 2. Low Impact External Routable Connectivity (LERC) 3. Transient Cyber Asset (TCA) 4. Removable Media
8/12/2019	Added revised definitions of Cyber Security Incident and Reportable Cyber Security Incident to the Pending Enforcement tab.
5/10/2019	Added Inactive Date to Qualified Transfer Path. Added Qualified Path definition and Effective Date
3/8/2019	Moved "Automatic Generation Control," "Balancing Authority" and "Pseudo-tie" to Subject to Enforcement tab.
7/3/2018	Updated effective date for Operational Planning Analysis (OPA), Protections System Coordination Study and Real-time Assessment (RTA).
6/12/2018	Added revised definitions of Transient Cyber Asset and Removable Media to the Pending Enforcement tab.
1/31/2018	Fixed truncated definition for Texas RE term Primary Frequency Response
1/2/2018	Moved to Subject to Enforcement: Balancing Contingency Event; Contingency Event Recovery Period; Contingency Reserve; Contingency Reserve Restoration Period; Most Severe Single Contingency; Pre-Reporting Contingency Event ACE Value; Reportable Balancing Contingency Event; Reserve Sharing Group Reporting ACE Moved to Retired tab: Contingency Reserve; Reserve Sharing Group Reporting ACE
10/6/2017	Added the Effective date of Automatic Generation Control, Pseudo-Tie and Balancing Authority
8/1/2017	Moved to Subject to Enforcement: Reporting Ace, Actual Frequency, Actual Net Interchange, Schedule Net Interchange, Interchange Meter Error, Automatic Time Error Correction
7/24/2017	Updated project link for definitions related to Project 2014-02, board adopted 2/12/15.
7/14/2017	Updated project link to Remedial Action Scheme with an effective date of 4/1/17; Removeable Media link to project 2014-02.
7/3/2017	Moved 'Geomagnetic Disturbance Vulnerability Assessment or GMD Vulnerability Assessment' to Subject to Enforcement
6/15/2017	Readded 'Governor' and 'Primary Frequency Response' to TexasRE
4/4/2017	Moved to Subject to Enforcement: Energy Emergency, Remedial Action Scheme, Special Protection System and Under3 Voltage Load Shedding Program. Moved terms inactive 3/31/17 to Retired tab.
3/16/2017	Removed Pending Inactive tab; not necessary
3/10/2017	Added Pending Inactive tab
2/7/2017	Added Effective Dates for: Balancing Contingency Event, Most Severe Single Contingency (MSSC), Reportable Balancing Contingency Event, Contingency Event Recovery Period, Contingency Reserve Restoration Period, Pre-Reporting Contingency Event ACE Value, Reserve Sharing Group Reporting ACE, Contingency Reserve
1/25/2017	Removed WECC terms 'Non-Spinning Reserve' and 'Spinning Reserve' per FERC Order No. 789. Docket No. RM13-13-000.
1/6/2017	Moved the following terms from Pending Enforcement to Subject to Enforcement: Operational Planning Analysis, Real-time Assessment (Revised Definition)
1/5/2017	Formatting of Glossary of Terms updated.
12/12/16	Updated: 'Adverse Reliability Impact' from Pending to Retired. NERC withdrew the related petition 3/18/2015
11/28/16	Updated ReliabilityFirst - Wind Generating Station term to inactive
9/28/16	Updated CIP v 5 standards effective date from 4/1/2016 to 7/1/2016 per FERC Order 822.
8/17/16	Board Adopted: Operational Planning Analysis and Real-time Assessment
7/13/16	Updated color coding of terms retired 6/30/2016 based on the terms becoming effective 7/1/2016.
6/24/16	FERC approved: Actual Frequency, Actual Net Interchange, Scheduled Net Interchange (NIS), Interchange Meter Error (IME), and Automatic Time Error Correction (ATEC) Reporting ACE: status updated
6/21/16	Correction: Reserve Sharing Group Reporting ACE, and Contingency Reserve changed to 11/5/2015 Board adoption date status
4/1/16	Effective: BES Cyber Asset, BES Cyber System, BES Cyber System Information, CIP Exceptional Circumstance, CIP Senior Manager, Cyber Assets, Cyber Security Incident, Dial-up Connectivity, Electronic Access Control or Monitoring Systems, Electronic Access Point, Electronic Security Perimeter, External Routable Connectivity, Interactive Remote Access, Intermediate System, Physical Access Control Systems, Physical Security Perimeter
3/31/16	Inactive: Critical Assets, Critical Cyber Assets, Cyber Assets, Cyber Security Incident, Electronic Security Perimeter, Physical Security Perimeter

**Mandatory Reliability Standards
Assessment Report No. 14**

**Appendix C-1
BC Hydro Feedback Survey Forms**

Disclaimer: This information has been prepared as input into BC Hydro's fourth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FERC Approved New/Revised/Retired Standard/Requirement	BSAW Link	Standard Name and Description	Current BCUC Adopted standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	BC Hydro Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	System Operations Cost One Time (\$)	System Operations Cost Ongoing (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
(Hyperlinks to the Standard)	(Hyperlinks to the available BSAW)			(Hyperlinks to the retired version of the Standard)	(Hyperlinks to the mapping documents if available)		(Hyperlinks to the referenced FERC Orders)	(Hyperlinks to the FERC Approval Rulings)	(Hyperlinks to the respective implementation plan and effective dates if applicable)				
CIP-012-1.R1	N/A	Cyber Security – Communications between Control Centers To protect the confidentiality and integrity of Real-time Assessment and Real-time monitoring data transmitted between Control Centers.	New Standard	New Standard - Retired N/A	N/A	BA, GO, GOP, RC, TD, TOP	Docket No. RM19-26-000 Published Feb 7, 2020	07.Aug.20	Implementation Plan Reliability Standard CIP-012-1 - Cyber Security – Communications between Control Centers Where approval by an applicable governmental authority is required, Reliability Standard CIP-012-1 shall become effective on the first day of the first calendar quarter that is twenty-four (24) calendar months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Effective Date: July 1, 2022	BC Hydro will be leveraging a combination of CARSTATET and WECC Industry based solutions and other technical solutions to encrypt all traffic between BC Hydro's Control Centres and other entities as well as within BC Hydro's own Control Centres. Discussions will be needed with other interconnecting entities (aka Alcan, Fortis BC, CAISO, and service providers via AT&T) to analyze existing communication infrastructure and implement technical solutions to protect data. Testing and implementation of solutions will be needed along with associated process documentation. One-time incremental cost estimates are for a total of 300 person hours @ \$100/hy = \$30,000. Ongoing annual incremental cost estimates are for a total of 300 person hours/year @ \$100/hy = \$30,000/year	\$602,000	\$30,000	The first day of the first calendar quarter that is twenty-four (24) calendar months after BCUC adoption.

**Mandatory Reliability Standards
Assessment Report No. 14**

**Appendix C-2
Instructions for Registered Entities**

INSTRUCTIONS FOR EXTERNAL STAKEHOLDERS	
To Registered Entities – British Columbia Mandatory Reliability Standards Program,	
Please review each new and revised Standard (and corresponding redlines and mapping documents as available) as per the links provided from the BC Hydro Reliability website:	https://www.bchydro.com/energy-in-bc/operations/transmission/transmission-system/reliability.html .
NOTE:	The 1 new, 11 revised, and 6 retired Standards have been broken out into their requirements to enable stakeholders to provide detailed comments per requirement.
Complete the CIP Stnd Feedback and OPS Stnds Feedback (the yellow tabs), and for each Standard assessed, please complete the following fields:	<p>a. Insert the name and applicable functions of your registered entity at the top of the Survey Form as indicated by the red text in Row 2.</p> <p>b. Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Column K): Please advise if there are no changes necessary to maintain compliance, or if changes are required, please describe a list of high-level incremental activities required to reach compliance. Please also indicate if there are any noted reliability/suitability impacts (technical or administrative) that could pose a challenge to potential adoption. Examples of suitability impacts: References made to unapproved standards, standard requirements depend on NERC approvals of data, undefined functional roles/responsibilities (i.e. Planning Coordinator), references to undefined processes/procedures, etc..</p> <p>c. Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any (S) (Columns L and M), if any associated with: - the adoption of a new Standard; or - a revision to a Standard compared to the immediately preceding version currently adopted by BCUC. Please indicate which costs are one-time versus ongoing, and ensure the assumptions associated with each estimate are captured in Column K. BC Hydro will use this information to develop recommendations to the BCUC regarding the potential impacts of each reliability Standard on registered entities for inclusion in the Report.</p> <p>d. BCUC Implementation Time (Column N): Please include an assessment of the amount of time your organization would reasonably require to come into compliance with the Standard/requirement once adopted by the BCUC (i.e. 6 months from adoption, immediately after adoption, etc.). BC Hydro will use this information to recommend an overall implementation time for each Standard/requirement for inclusion in the Report.</p> <p>Regards, BC Hydro Reliability Compliance Department</p>

**Mandatory Reliability Standards
Assessment Report No. 14**

**Appendix C-3
External Stakeholder Feedback**

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.

<small>INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY IN TO CP, GO, GP, ICI</small>													
<small>FERC Approved New/Revised/Retired Standard/Requirement</small>	<small>Market Link</small>	<small>Standard Name and Description</small>	<small>Current BCSC Adopted Standards to be Superseded</small>	<small>FERC Approved Revision</small>	<small>FERC Approved Revision Mapping Document</small>	<small>Functional Applicability of FERC Approved Standard/Requirement</small>	<small>FERC Order No., Order Date and Order Publication Date</small>	<small>Effective Date of FERC Rule Approving the Standard</small>	<small>FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date</small>	<small>Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt+Enter to insert a carriage return in a cell)</small>	<small>Estimated Incremental/Net Costs Associated with Cost One Time (\$)</small>	<small>Cost Ongoing (\$)</small>	<small>BCSC Implementation Time (Press Alt+Enter to insert a carriage return in a cell)</small>
CP-012-1 (R)	REAR N/A	Cyber Security – Communications between Control Centers <small>† updated for consistency and clarity of Real-time Assessment and Real-time monitoring data transferred between Control Centers</small>	New Standard	New Standard - Redline N/A	N/A	NA, GO, GP, ICI TO, TOP	Order No. 888 (Final) (enacted 12/1/2022)	12/20/22	Implementation Plan <small>Reliability Standard CP-012-1 - Cyber Security – Communications between Control Centers Where approved by an applicable governmental authority is required, Reliability Standard CP-012-1 shall become effective on the first day of the first calendar quarter that is twenty-four (24) calendar months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Effective Date: July 1, 2022</small>	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)

FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Schedule and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental Net Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
											One Time (\$)	Ongoing (\$)	
BAL-002.2.1	BAL-002.2.PSA/W	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency.	BAL-002.1.1 Adopted 2015 Assessment Report 9 6-22-15	A. No changes to the assessment from previous version.	N/A	BA, FRSG	Docket No. 2010-4-000 Issued July 19, 2010	12-31-10	BAL-002.2 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BAL-002.2.2	BAL-002.2.PSA/W	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency.	BAL-002.1.1 Adopted 2015 Assessment Report 9 6-22-15	A. No changes to the assessment from previous version.	N/A	BA	Docket No. 2010-4-000 Issued July 19, 2010	12-31-10	BAL-002.2 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BAL-002.2.3	BAL-002.2.PSA/W	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency, and supporting Frequency, until the Frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-002.1.1 Adopted 2015 Assessment Report 9 6-22-15	A. No changes to the assessment from previous version.	N/A	BA	Docket No. 2010-4-000 Issued July 19, 2010	12-31-10	BAL-002.2 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec 1, 2010	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BAL-002.2.4	BAL-002.2.PSA/W	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency, and supporting Frequency, until the Frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-002.1.1 Adopted 2015 Assessment Report 9 6-22-15	A. No changes to the assessment from previous version.	N/A	BA	Docket No. 2010-4-000 Issued July 19, 2010	12-31-10	BAL-002.2 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec 1, 2010	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
FAC-002.3.R1	RS&W N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002.2 Adopted 2015 Assessment Report 8 6-28-15	A. No changes to the assessment from previous version.	N/A	TP, PC	Docket No. 2010-4-000 Issued July 30, 2010	30-Oct-10	FAC-002.3 Implementation Plan Reliability Standards FAC-002.3, IRO-010-3, MOD-013-3, MOD-032-2, NJC-001-4, PRC-004-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2011	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
FAC-002.3.R2	RS&W N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002.2 Adopted 2015 Assessment Report 8 6-28-15	A. No changes to the assessment from previous version.	N/A	GO, TP, PC	Docket No. 2010-4-000 Issued July 30, 2010	30-Oct-10	FAC-002.3 Implementation Plan Reliability Standards FAC-002.3, IRO-010-3, MOD-013-3, MOD-032-2, NJC-001-4, PRC-004-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2011	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
FAC-002.3.R3	RS&W N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002.2 Adopted 2015 Assessment Report 8 6-28-15	A. Review Available/Use Load Survey Entry	N/A	DP, TO, PC	Docket No. 2010-4-000 Issued July 30, 2010	30-Oct-10	FAC-002.3 Implementation Plan Reliability Standards FAC-002.3, IRO-010-3, MOD-013-3, MOD-032-2, NJC-001-4, PRC-004-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2011	ALREADY IN COMPLIANCE - CANFOR - NORTHWOOD PULP MILL AND TRANSMISSION PLANNER "BC HYDRO" HAVE COMPLETED FACILITIES INTERCONNECTION STUDIES PREVIOUSLY AND WILL CONTINUE TO DO SO, IF SIGNIFICANT POWER GENERATION / CONSUMPTION CAPACITY CHANGES			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GP, etc.)												
FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
FAC-003 RB	RS&W N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-003.2 Adopted 2015 Assessment Report 8 6-28-15	1. No changes in the requirement from previous version.	N/A	TO, TP, PC	Order No. 2010-6-000, issued Oct. 29, 2010	30-Oct-10	FAC-003.3 Implementation Plan Reliability Standards FAC-003.3, IRO-010-3, MOD-013.3, MOD-032.2, NUC-001.4, PRC-006.4, and TQP-003.4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2011	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
FAC-003 RS	RS&W N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-003.2 Adopted 2015 Assessment Report 8 6-28-15	1. No changes in the requirement from previous version.	N/A	GO, TP, PC	Order No. 2010-6-000, issued Oct. 29, 2010	30-Oct-10	FAC-003.3 Implementation Plan Reliability Standards FAC-003.3, IRO-010-3, MOD-013.3, MOD-032.2, NUC-001.4, PRC-006.4, and TQP-003.4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2011	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
FAC-013.2 R1 RETIRE	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G-7-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommendation for Retirement: RM19-16-000 & RM19-17-000	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
FAC-013.2 RB RB-TRC	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G-7-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommendation for Retirement: RM19-16-000 & RM19-17-000	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
FAC-013.2 R3 RETIRE	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G-7-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommendation for Retirement: RM19-16-000 & RM19-17-000	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
FAC-013.2 R4 RETIRE	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G-7-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommendation for Retirement: RM19-16-000 & RM19-17-000	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
FAC-013.2 R5 RETIRE	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G-7-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommendation for Retirement: RM19-16-000 & RM19-17-000	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	Recommendation for Retirement: Order No. 873 issued Sept 17, 2009	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTRY (i.e. TO, DP, GO, DP, etc.)										Estimated Incremental Net Costs Associated with Revision/New Standard/Requirement, if any		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	One Time (\$)	Ongoing (\$)	
CAC-032.09.06-1906	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-031-1 Adopted 2011 Assessment Report 1 G-67-09	N/A - Retired Standard	NA - Retired Standard	PC		Recommended for Retirement RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Recommended for Retirement Order No. 873 Issued Sept 17, 2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
NT-004.3.1.R1.RETIRE	NA Retired	Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	NT-004.2 Adopted 2011 Assessment Report 3 G-163-11	N/A - Retired Standard	NA - Retired Standard	PSE	RM14-6-000 Issued Nov 26, 2014	Recommended for Retirement RM19-16-000 & RM19-17-000	Recommended for Retirement Order No. 873 Issued Sept 17, 2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
NT-004.3.1.R2.RETIRE	NA Retired	Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	FAC-034.1 Adopted 2011 Assessment Report 3 G-163-11	N/A - Retired Standard	NA - Retired Standard	PSE	RM14-6-000 Issued Nov 26, 2014	Recommended for Retirement RM19-16-000 & RM19-17-000	Recommended for Retirement Order No. 873 Issued Sept 17, 2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
NT-004.3.1.R3.RETIRE	NA Retired	Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	FAC-034.1 Adopted 2011 Assessment Report 3 G-163-11	N/A - Retired Standard	NA - Retired Standard	BA	RM14-6-000 Issued Nov 26, 2014	Recommended for Retirement RM19-16-000 & RM19-17-000	Recommended for Retirement Order No. 873 Issued Sept 17, 2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
NT-006.5.R1	RS&W N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006.4 Adopted 2011 Assessment Report 8 8-38-15	1. No changes to the requirement from previous version	NA	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Date: 14, 2020	NT-006.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.6, PRC-004.6, TOP-001.6, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
NT-006.5.R2	RS&W N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006.4 Adopted 2011 Assessment Report 8 8-38-15	1. No changes to the requirement from previous version	NA	BA, TSP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Date: 14, 2020	NT-006.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.6, PRC-004.6, TOP-001.6, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
NT-006.5.R3	RS&W N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006.4 Adopted 2011 Assessment Report 8 8-38-15	1. Remove Part 3.1 - If a Reliability Authority Issues a Reliability Adjustment Approval, Interchange the Reliability Authority must communicate that fact to the Reliability Coordinator via email from the Reliability Authority	NA	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Date: 14, 2020	NT-006.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.6, PRC-004.6, TOP-001.6, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
NT-006.5.R4.Revised	RS&W N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006.4 Adopted 2011 Assessment Report 8 8-38-15	1. Remove requirement 4.1.4. update. The requirement is now considered "legacy"	NA	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Date: 14, 2020	NT-006.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.6, PRC-004.6, TOP-001.6, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
NT-006.5.R5.Revised	RS&W N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006.4 Adopted 2011 Assessment Report 8 8-38-15	1. Remove requirement 4.1.4. update. The requirement is now considered "legacy"	NA	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Date: 14, 2020	NT-006.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.6, PRC-004.6, TOP-001.6, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
NT-009.3.1.R3	NT-009.3.1.R3.AW	Title: Implementation of Interchange To ensure that Balancing Authorities implement the interchange as agreed upon in the Interchange confirmation process.	NT-009.1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	NA - Retired Standard	BA	Docket No. RM09-4-000 NT-009-1	NA	Recommend for Retirement per Docket No. RM20-4-000	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTRY (i.e., TO, DP, GO, DP, etc.)												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
NT-009-2.1	RSAW N/A	Title: Implementation of Interchange To ensure that Balancing Authorities implement the Interchange as agreed upon in the Interchange confirmation process.	NT-009-2.1 Adopted 2015 Assessment Report 8 8-30-15	1 - Remove reference to NT-009-2	N/A	BA	Docket No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	NT-009-3 implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRC-002-6, PRC-004-6, TOP-001-5, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
NT-009-3.R3	RSAW N/A	Title: Implementation of Interchange To ensure that Balancing Authorities implement the Interchange as agreed upon in the Interchange confirmation process.	NT-009-3.1 Adopted 2015 Assessment Report 8 8-30-15	1 - No changes to the requirement from previous version	N/A	BA	Docket No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	NT-009-3 implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRC-002-6, PRC-004-6, TOP-001-5, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
NT-010-2.1.R1	NT-010-2.1.RSAW	Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or implemented interchange to address reliability.	NT-010-1 Adopted 2008 Assessment Report 1 6-67-09	N/A - Retired Standard	N/A - Retired Standard	BA			Recommendation for Retirement RM19-16-000 & RM19-17-000 Order No. 873 issued Sept 17, 2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
NT-010-2.1.R2	NT-010-2.1.RSAW	Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or implemented interchange to address reliability.	NT-010-1 Adopted 2008 Assessment Report 1 6-67-09	N/A - Retired Standard	N/A - Retired Standard	BA			Recommendation for Retirement RM19-16-000 & RM19-17-000 Order No. 873 issued Sept 17, 2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
NT-010-2.1.R3	NT-010-2.1.RSAW	Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or implemented interchange to address reliability.	NT-010-1 Adopted 2008 Assessment Report 1 6-67-09	N/A - Retired Standard	N/A - Retired Standard	BA			Recommendation for Retirement RM19-16-000 & RM19-17-000 Order No. 873 issued Sept 17, 2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
RC-003-6.R1	RC-003-6.RSAW	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions. Regional Variance Purpose: To develop a methodology that creates models for performing Operational Planning Analysis and Real-time Assessments.	RC-003-5 Adopted 2018 Assessment Report 11 8-30-18	N/A - Retired Standard	N/A - Retired Standard	RC	Docket No. RC20-8-000, Issued Oct 19, 2020	30-Oct-20	Recommendation for Retirement per Docket No. RC20-8-000	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
RC-003-7.D.A.1	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RC-003-5 Adopted 2018 Assessment Report 11 8-30-18	1 - New Regional Variance provided, requires BCUC approval in coordination with other DCA's to ensure methodology is tested and verified. D.A. 1 to D.A. 2 and implementation quality will determine context of the methodology.	N/A	RC	Docket No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	RC-003-7 implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRC-002-7, PRC-004-6, TOP-001-5, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
RC-003-7.D.A.2	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RC-003-5 Adopted 2018 Assessment Report 11 8-30-18	1 - New Regional Variance provided, requires BCUC approval in coordination with other DCA's.	N/A	RC	Docket No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	RC-003-7 implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRC-002-7, PRC-004-6, TOP-001-5, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
RC-003-7.R1.Revised	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RC-003-5 Adopted 2018 Assessment Report 11 8-30-18	1 - Review implemented in 1a to verify the requirement is not violated	N/A	RC	Docket No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	RC-003-7 implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRC-002-7, PRC-004-6, TOP-001-5, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
RC-003-7.R2	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RC-003-5 Adopted 2018 Assessment Report 11 8-30-18	1 - No changes to the requirement from the previous version	N/A	RC	Docket No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	RC-003-7 implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRC-002-7, PRC-004-6, TOP-001-5, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.													
INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)													
FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)	
BCUC-7.5A	RS&W N/A	Title: Reliability Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-003.5 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	RC	Order No. RM19-16-006 & RM19-17-000, Issued Sept 17, 2020	October 06, 2019, 16:00A, RM19-17-000, Effective Dec. 14, 2020	RO-003.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-008-3, IRO-002-7, PRC-004-6, TOP-001-6, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BCUC-7.5B	RS&W N/A	Title: Reliability Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-003.5 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	RC	Order No. RM19-16-006 & RM19-17-000, Issued Sept 17, 2020	October 06, 2019, 16:00A, RM19-17-000, Effective Dec. 14, 2020	RO-003.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-008-3, IRO-002-7, PRC-004-6, TOP-001-6, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BCUC-7.5C	RS&W N/A	Title: Reliability Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-003.5 Adopted 2018 Assessment Report 11 8-31-18	2. No changes to the requirement from previous version	N/A	RC	Order No. RM19-16-006 & RM19-17-000, Issued Sept 17, 2020	October 06, 2019, 16:00A, RM19-17-000, Effective Dec. 14, 2020	RO-003.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-008-3, IRO-002-7, PRC-004-6, TOP-001-6, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BCUC-7.5D	RS&W N/A	Title: Reliability Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-003.5 Adopted 2018 Assessment Report 11 8-31-18	2. No changes to the requirement from previous version	N/A	RC	Order No. RM19-16-006 & RM19-17-000, Issued Sept 17, 2020	October 06, 2019, 16:00A, RM19-17-000, Effective Dec. 14, 2020	RO-003.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-008-3, IRO-002-7, PRC-004-6, TOP-001-6, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BCUC-7.5E	RS&W N/A	Title: Reliability Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-003.5 Adopted 2018 Assessment Report 10 8-31-17	1. No changes to the requirement from previous version	N/A	RC	Order No. R020-4-000, Issued Oct 30, 2020	30-Oct-20 RO-003.3 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-013-3, MCO-033-2, NJC-001-4, PRC-008-4, and TOP-003-4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BCUC-7.5F	RS&W N/A	Title: Reliability Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-003.5 Adopted 2018 Assessment Report 11 8-31-18	2. No changes to the requirement from previous version	N/A	RC	Order No. RM19-16-006 & RM19-17-000, Issued Sept 17, 2020	October 06, 2019, 16:00A, RM19-17-000, Effective Dec. 14, 2020	RO-003.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-008-3, IRO-002-7, PRC-004-6, TOP-001-6, and VAR-001-6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BCUC-7.5G	RS&W N/A	Title: Reliability Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-003.5 Adopted 2018 Assessment Report 10 8-31-17	1. No changes to the requirement from previous version	N/A	RC	Order No. R020-4-000, Issued Oct 30, 2020	30-Oct-20 RO-003.3 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-013-3, MCO-033-2, NJC-001-4, PRC-008-4, and TOP-003-4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
BCUC-7.5H	RS&W N/A	Title: Reliability Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-003.5 Adopted 2017 Assessment Report 10 8-31-17	1. Remove jurisdictional Link to the Data Entry	N/A	RC	Order No. R020-4-000, Issued Oct 30, 2020	30-Oct-20 RO-003.3 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-013-3, MCO-033-2, NJC-001-4, PRC-008-4, and TOP-003-4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)

FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementing Time Provisions and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)	
MCO-01-1-04	RS&W N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	MCO-01-2-7 Adopted 2017 Assessment Report 10 8-29-17	4 - Remove Reliability Load Service Entry	N/A	BA, DP, GO, GOP, TO, TOP	Docket No. 2016-4-000 Issued Oct 30, 2016	30 Oct-16	MCO-01-3-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MCO-013-3, MCO-032-2, NUJ-001-4, PRC-006-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.				
MCO-00-0-01	MCO-00-0-04&N/A	Title: Providing Intermittent Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators To ensure that assessments and validation of past events and databases can be performed, reporting of actual demand data is needed. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcement for continued reliability. In addition to assist in proper real-time operating, load information related to controllable Demand-Side Management programs is needed.	MCO-00-0-0 Adopted 2009 Assessment Report 1 6-17-09	N/A - Retired Standard	N/A - Retired Standard	LSE, RP, TP	Docket No. R2006-15-000 Issued Mar 18, 2007	Recommendation for Retirement RM19-16-000 & RM19-17-000	Recommendation for Retirement Order No. 873 Issued Sept 17, 2000	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AND TRANSMISSION PLANNER "BC HYDRO" HAVE AN AUTHORIZED LOCAL OPERATING ORDER WHICH COVERS THIS IRO-010-3 R3 REQUIREMENT			
MCO-00-0-01	MCO-00-0-04&N/A	Title: Providing Intermittent Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators To ensure that assessments and validation of past events and databases can be performed, reporting of actual demand data is needed. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcement for continued reliability. In addition to assist in proper real-time operating, load information related to controllable Demand-Side Management programs is needed.	MCO-00-0-0 Adopted 2009 Assessment Report 1 6-17-09	N/A - Retired Standard	N/A - Retired Standard	TSP	Docket No. R2006-15-000 Issued Mar 18, 2007	Recommendation for Retirement RM19-16-000 & RM19-17-000	Recommendation for Retirement Order No. 873 Issued Sept 17, 2000	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)			
MCO-01-1-01	RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MCO-01-1-2 Adopted 2017 Assessment Report 10 8-29-17	4 - Remove Reliability Load Service Entry	N/A	BA, PC	Docket No. R2006-4-000 Issued Oct 30, 2006	30 Oct-06	MCO-01-1-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MCO-013-3, MCO-032-2, NUJ-001-4, PRC-006-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021				
MCO-01-1-02	RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MCO-01-1-2 Adopted 2017 Assessment Report 10 8-29-17	4 - No changes in the next report from previous release	N/A	BA, TP, RP, DP, PC	Docket No. R2006-4-000 Issued Oct 30, 2006	30 Oct-06	MCO-01-1-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MCO-013-3, MCO-032-2, NUJ-001-4, PRC-006-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	ALREADY IN COMPLIANCE - CANFOR - NORTHWOOD PULP MILL AND TRANSMISSION PLANNER "BC HYDRO" HAVE AN AUTHORIZED LOCAL OPERATING ORDER WHICH COVERS THIS MCO-01-1-02 REQUIREMENT			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, GP, etc.)												
FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Responsible Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
NUC-001.4 ALL Requirements	RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to ensure the responsibilities and obligations of requestors and respondents of that data.	MOD-001-2 Adopted 2017 Assessment Report 10 6-29-17	No changes to the requirement from previous version	N/A	BA, PC	Docket No. 2010-4-000, Issued Oct. 30, 2010	30-Oct-10	MOD-001-3 Implementation Plan Reliability Standards FAC-003.3, IRO-010-3, MOD-001-3, MOD-032.2, NJC-001-4, PRC-004.4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
MOD-001.3 RL	RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to ensure the responsibilities and obligations of requestors and respondents of that data.	MOD-001-2 Adopted 2017 Assessment Report 10 6-29-17	No changes to the requirement from previous version	N/A	BA, TP, RP, DP, PC	Docket No. 2010-4-000, Issued Oct. 30, 2010	30-Oct-10	MOD-001-3 Implementation Plan Reliability Standards FAC-003.3, IRO-010-3, MOD-001-3, MOD-032.2, NJC-001-4, PRC-004.4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	ALREADY IN COMPLIANCE - CANFOR - NORTHWOOD PULP MILL AND TRANSMISSION PLANNER "BC HYDRO" HAVE AN AUTHORIZED LOCAL OPERATING ORDER WHICH COVERS THIS MOD-001-3 R2 REQUIREMENT		
MOD-032.2 RL	RS&W N/A	Title: Steady-State and Dynamic System Model Validation To establish consistent validation requirements to facilitate the collection of accurate data and building of planning models to analyze the reliability of the interconnected transmission system.	MOD-003-1 Adopted 2015 Assessment Report 8 6-28-15	No changes to the requirement from previous version	N/A	PC	Docket No. 2010-4-000, Issued Oct. 30, 2010	30-Oct-10	MOD-032-2 Implementation Plan Reliability Standards FAC-003.3, IRO-010-3, MOD-001-3, MOD-032.2, NJC-001-4, PRC-004.4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
MOD-032.2 RL	RS&W N/A	Title: Steady-State and Dynamic System Model Validation To establish consistent validation requirements to facilitate the collection of accurate data and building of planning models to analyze the reliability of the interconnected transmission system.	MOD-003-1 Adopted 2015 Assessment Report 8 6-28-15	No changes to the requirement from previous version	N/A	RC, TOP	Docket No. 2010-4-000, Issued Oct. 30, 2010	30-Oct-10	MOD-032-2 Implementation Plan Reliability Standards FAC-003.3, IRO-010-3, MOD-001-3, MOD-032.2, NJC-001-4, PRC-004.4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
NUC-001.4 ALL Requirements	RS&W N/A	Title: Nuclear Plant Interface Coordination This standard requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the support of ensuring nuclear plant safe operation and shutdown.	N/A	N/A	N/A	TO, TOP, TP, TSP, BA, RC, DP, GO, GOP, PC	Docket No. 2010-4-000, Issued Oct. 30, 2010	30-Oct-10	N/A	CANFOR - NORTHWOOD PULP MILL IS NOT A NUCLEAR POWER GENERATING FACILITY, SO THIS REQUIREMENT DOES NOT APPLY		
PRC-004.6 RL	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-6(3) Adopted 2015 Assessment Report 9 6-22-15	No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. 2010-16-000, A BMTS 17-000, Issued Dec. 07, 2010	Docket No. 2010-16-000, A BMTS 17-000, Effective Dec. 14, 2010	PRC-004-6 Implementation Plan Reliability Standards FAC-003.4, INT-006-5, INT-009-3, IRO-002-4, PRC-004-6, TOP-001-6, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority	NOT APPLICABLE AS CANFOR - NORTHWOOD PULP MILL DO NOT OWN A BES INTERRUPTING DEVICE		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTRY (i.e. TO, DP, GO, DP, etc.)										Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	One Time (\$)	Ongoing (\$)	
PRC-004.6.F.4	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-501 Adopted 2015 Assessment Report 9 8-31-15	1. No changes to the standard from previous version	N/A	DP, GO, TO	Order No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2019	Order No. RM19-16-000 & RM19-17-000 Effective Dec. 14, 2019	PRC-004.6 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE AS CANFOR - NORTHWOOD PULP MILL DO NOT OWN A BES INTERRUPTING DEVICE			
PRC-004.6.F.3	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-501 Adopted 2015 Assessment Report 9 8-31-15	1. No changes to the standard from previous version	N/A	DP, GO, TO	Order No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2019	Order No. RM19-16-000 & RM19-17-000 Effective Dec. 14, 2019	PRC-004.6 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE AS CANFOR - NORTHWOOD PULP MILL DO NOT OWN A BES INTERRUPTING DEVICE			
PRC-004.6.F.3.Revised	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-501 Adopted 2015 Assessment Report 9 8-31-15	1. Remove subelement 4.1.1.4. Update the subelement to new subelement "5.1.1.4"	N/A	DP, GO, TO	Order No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2019	Order No. RM19-16-000 & RM19-17-000 Effective Dec. 14, 2019	PRC-004.6 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE AS CANFOR - NORTHWOOD PULP MILL DO NOT OWN A BES INTERRUPTING DEVICE			
PRC-004.6.F.5	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-501 Adopted 2015 Assessment Report 9 8-31-15	1. No changes to the standard from previous version	N/A	DP, GO, TO	Order No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2019	Order No. RM19-16-000 & RM19-17-000 Effective Dec. 14, 2019	PRC-004.6 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE AS CANFOR - NORTHWOOD PULP MILL DO NOT OWN A BES INTERRUPTING DEVICE			
PRC-004.6.F.6	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-501 Adopted 2015 Assessment Report 9 8-31-15	1. No changes to the standard from previous version	N/A	DP, GO, TO	Order No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2019	Order No. RM19-16-000 & RM19-17-000 Effective Dec. 14, 2019	PRC-004.6 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE AS CANFOR - NORTHWOOD PULP MILL DO NOT OWN A BES INTERRUPTING DEVICE			
PRC-004.6.F.6	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-501 Adopted 2015 Assessment Report 9 8-31-15	1. No changes to the standard from previous version	N/A	DP, GO, TO	Order No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2019	Order No. RM19-16-000 & RM19-17-000 Effective Dec. 14, 2019	PRC-004.6 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE AS CANFOR - NORTHWOOD PULP MILL DO NOT OWN A BES INTERRUPTING DEVICE			
PRC-004.6.F.7	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the standard from previous version	N/A	PC	Order No. R2000-4-000 Issued Oct 30, 2020	30-Chr-20 Effective Dec. 14, 2020	PRC-004.6 Implementation Plan Reliability Standards FAC-003.3, IRO-010.3, MOD-011.3, MOD-032.2, NJC-001.4, PRC-008.4, and TOP-003.4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
PRC-004.6.F.7.4	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. Update reference to PRC-008.4	N/A	PC	Order No. R2000-4-000 Issued Oct 30, 2020	30-Chr-20 Effective Dec. 14, 2020	PRC-004.6 Implementation Plan Reliability Standards FAC-003.3, IRO-010.3, MOD-011.3, MOD-032.2, NJC-001.4, PRC-008.4, and TOP-003.4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)												
FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Frame and US Enforcement Date	Standard/Requirement Comments, Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
PRC-006-4-D-B-1	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - No changes to the requirement from previous version	N/A	DP, DP/UF, PC, TO	Docket No. 2010-4-000, Issued Oct 30, 2010	30-Oct-10	PRC-006-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4-D-B-11	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - No changes to the requirement from previous version	N/A	PC	Docket No. 2010-4-000, Issued Oct 30, 2010	30-Oct-10	PRC-006-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4-D-B-12	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - No changes to the requirement from previous version	N/A	PC	Docket No. 2010-4-000, Issued Oct 30, 2010	30-Oct-10	PRC-006-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4-D-B-2	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - No changes to the requirement from previous version	N/A	PA, PC	Docket No. 2010-4-000, Issued Oct 30, 2010	30-Oct-10	PRC-006-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4-D-B-3	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - No changes to the requirement from previous version	N/A	PC	Docket No. 2010-4-000, Issued Oct 30, 2010	30-Oct-10	PRC-006-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)

FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Frame and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
PRC-006-4 R1	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	PC	Docket No. ER00-4-000, issued Oct 30, 2000	30-Oct-00	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)	
PRC-006-4 R1	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	PC	Docket No. ER00-4-000, issued Oct 30, 2000	30-Oct-00	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)	
PRC-006-4 R10	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	TO	Docket No. ER00-4-000, issued Oct 30, 2000	30-Oct-00	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)	
PRC-006-4 R11	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	PA, PC	Docket No. ER00-4-000, issued Oct 30, 2000	30-Oct-00	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)	
PRC-006-4 R12	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	PC	Docket No. ER00-4-000, issued Oct 30, 2000	30-Oct-00	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)	

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)

FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Frame and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
											One Time (\$)	Ongoing (\$)	
PRC-006-4 R13	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	PC	Docket No. R0200-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4 R14	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	PC	Docket No. R0200-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4 R15	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	PC	Docket No. R0200-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4 R2	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	N/A	PC	Docket No. R0200-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4 R3	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1. Update reference to PRC-006-4	N/A	PC	Docket No. R0200-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MCO-031-3, MCO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)

FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Frame and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
											One Time (\$)	Ongoing (\$)	
PRC-006-4 R4	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - Update references in PRC-006-4	N/A	PC	Docket No. 2020-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MDO-011-3, MDO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4 R3	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - No changes to the requirement from previous version	N/A	PC	Docket No. 2020-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MDO-011-3, MDO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4 R2	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - No changes to the requirement from previous version	N/A	PC	Docket No. 2020-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MDO-011-3, MDO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4 R1	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - No changes to the requirement from previous version	N/A	PC	Docket No. 2020-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MDO-011-3, MDO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)		
PRC-006-4 R0	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (ULFS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-31-18	1 - No changes to the requirement from previous version	N/A	PC	Docket No. 2020-4-000, issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan	Reliability Standards FAC-003-3, IRO-010-3, MDO-011-3, MDO-032-2, NJC-001-4, PRC-004-4 and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)

FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
											One Time (\$)	Ongoing (\$)	
PRC-006.6.D3	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide load reset system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous standard.	N/A	PC	Docket No. 2019-0-0001 issued July 9, 2020	2020	PRC-006.6 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
PRC-004.3.D.2	RS&W N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-004-2 Adopted 2016 Assessment Report 9 R-33-16	1. New Regional Reliability Standard requires GOs to set all applicable voltage protection coordination with PRC-004.3.D.2 such that the applicable protection does not cause the normal device to operate excursions into the protection of the area of the other GO.	N/A	GO	Docket No. 2020-2-0001 issued July 9, 2020 Publication Date: 7/9/20	Comments on the collection of information are due September 29, 2020.	PRC-004.3 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
PRC-004.3.R1	RS&W N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-004-2 Adopted 2016 Assessment Report 9 R-33-16	1. Each Generating Owner shall set its protective devices to coordinate with PRC-004.3.D.2 such that the protection response to its own system excursions does not cause the normal device to operate excursions into the protection of the area of the other GO.	N/A	GO	Docket No. 2020-2-0001 issued July 9, 2020 Publication Date: 7/9/20	Comments on the collection of information are due September 29, 2020.	PRC-004.3 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
PRC-004.3.R2	RS&W N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-004-2 Adopted 2016 Assessment Report 9 R-33-16	1. Each Generating Owner shall set its protective devices to coordinate with PRC-004.3.D.2 such that the protection response to its own system excursions does not cause the normal device to operate excursions into the protection of the area of the other GO.	N/A	GO	Docket No. 2020-2-0001 issued July 9, 2020 Publication Date: 7/9/20	Comments on the collection of information are due September 29, 2020.	PRC-004.3 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
PRC-004.3.R3	RS&W N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-004-2 Adopted 2016 Assessment Report 9 R-33-16	1. Each Generating Owner shall coordinate its protective devices to coordinate with PRC-004.3.D.2 such that the protection response to its own system excursions does not cause the normal device to operate excursions into the protection of the area of the other GO.	N/A	GO, PC	Docket No. 2020-2-0001 issued July 9, 2020 Publication Date: 7/9/20	Comments on the collection of information are due September 29, 2020.	PRC-004.3 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
PRC-004.3.R4	RS&W N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-004-2 Adopted 2016 Assessment Report 9 R-33-16	1. Each Generating Owner shall coordinate its protective devices to coordinate with PRC-004.3.D.2 such that the protection response to its own system excursions does not cause the normal device to operate excursions into the protection of the area of the other GO.	N/A	GO, PC	Docket No. 2020-2-0001 issued July 9, 2020 Publication Date: 7/9/20	Comments on the collection of information are due September 29, 2020.	PRC-004.3 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
TOP-001.6.R1	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous standard.	TOP-001.6 Mapping Document	TOP	Docket No. 2018-10-0004 & 2019-11-0001 issued Sept 17, 2020	Docket No. 2018-10-0004 & 2019-11-0001 Effective Dec. 14, 2020	TOP-001.6 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GP, etc.)

FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Timeline and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)	
TCP-001.5.R.10	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6-30-18	S - No changes to the requirement from previous version	TCP-001.5 Mapping Document	TOP	Docket No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TCP-001.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.4, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
TOP-001.5.R.11	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6-30-18	S - No changes to the requirement from previous version	TCP-001.5 Mapping Document	BA	Docket No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TCP-001.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.4, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
TCP-001.5.R.12	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6-30-18	S - No changes to the requirement from previous version	TCP-001.5 Mapping Document	TOP	Docket No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TCP-001.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.4, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
TCP-001.5.R.13	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6-30-18	S - No changes to the requirement from previous version	TCP-001.5 Mapping Document	TOP	Docket No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TCP-001.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.4, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
TCP-001.5.R.14	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6-30-18	S - No changes to the requirement from previous version	TCP-001.5 Mapping Document	TOP	Docket No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TCP-001.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.4, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
TCP-001.5.R.15	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6-30-18	S - No changes to the requirement from previous version	TCP-001.5 Mapping Document	TOP	Docket No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TCP-001.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.4, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
TCP-001.5.R.16	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6-30-18	S - No changes to the requirement from previous version	TCP-001.5 Mapping Document	TOP	Docket No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TCP-001.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.4, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
TCP-001.5.R.17	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6-30-18	S - No changes to the requirement from previous version	TCP-001.5 Mapping Document	BA	Docket No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TCP-001.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.4, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			
TCP-001.5.R.18	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6-30-18	S - No changes to the requirement from previous version	TCP-001.5 Mapping Document	TOP	Docket No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TCP-001.5 Implementation Plan Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRC-002.4, PRC-004.6, TOP-001.5, and VAR-001.6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.												
INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)												
FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact	Estimated Incremental New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	Press Alt-Enter to insert a carriage return in a cell)
TOP-001.5.R10 Revoked	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. Remove requirement 4 in table 1. This requirement is now combined "separate"	TOP-001.5 Mapping Document		Order No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Order No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TOP-001.5.R2	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	2. No changes to the requirement from previous version	TOP-001.5 Mapping Document	BA	Order No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Order No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TOP-001.5.R20	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Order No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Order No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TOP-001.5.R21	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Order No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Order No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TOP-001.5.R22 Reserved	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. Remove requirement 4 in table 1. This requirement is now combined "separate"	TOP-001.5 Mapping Document		Order No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Order No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TOP-001.5.R23	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	BA	Order No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Order No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TOP-001.5.R24	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	BA	Order No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Order No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TOP-001.5.R3	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	BA, DP, GOP	Order No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Order No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	ALREADY IN COMPLIANCE - CANFOR - NORTHWOOD PULP MILL AND TRANSMISSION OPERATOR "BC HYDRO" HAVE AN AUTHORIZED LOCAL OPERATING ORDER WHICH COVERS THIS REQUIREMENT		
TOP-001.5.R4	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	BA, DP, GOP	Order No. RM19-16-006 & RM19-17-000 Issued Sept 17, 2020	Order No. RM19-16-006 & RM19-17-000 Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	ALREADY IN COMPLIANCE - CANFOR - NORTHWOOD PULP MILL AND TRANSMISSION OPERATOR "BC HYDRO" HAVE AN AUTHORIZED LOCAL OPERATING ORDER WHICH COVERS THIS REQUIREMENT		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.												
INSERT YOUR ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTRY (i.e., TO, DP, GO, DP, etc.)												
FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Substantive Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
TOP-001.5.RS	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6.33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	DP, GOP, TOP	Order No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Order No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.		
TOP-001.5.RS	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6.33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	DP, GOP, TOP	Order No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Order No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.		
TOP-001.5.RT	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6.33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Order No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Order No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.		NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)
TOP-001.5.RS	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6.33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Order No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Order No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.		NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)
TOP-001.5.RS	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 6.33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	BA, TOP	Order No. RM19-16-000 & RM19-17-000, Issued Sept 17, 2020	Order No. RM19-16-000 & RM19-17-000, Effective Dec. 14, 2020	TOP-001.5 Implementation Plan	Reliability Standards FAC-008.4, INT-006.5, INT-009.3, IRO-002.6, PRC-004.6, TOP-001.5, and VAR-001.6. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.		NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)
TOP-003.4.R1	RS&W N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003.3 Adopted 2017 Assessment Report 10 6.30-17	1. No changes to the requirement from previous version	N/A	TOP	Order No. R020-4-000, Issued Oct 30, 2020	30-Oct-20	TOP-003.4 Implementation Plan	Reliability Standards FAC-003.3, IRO-010.3, MOD-013.3, MOD-033.2, NJC-001.4, PRC-008.4, and TOP-003.4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021		NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)
TOP-003.4.R2	RS&W N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003.3 Adopted 2017 Assessment Report 10 6.30-17	1. No changes to the requirement from previous version	N/A	BA	Order No. R020-4-000, Issued Oct 30, 2020	30-Oct-20	TOP-003.4 Implementation Plan	Reliability Standards FAC-003.3, IRO-010.3, MOD-013.3, MOD-033.2, NJC-001.4, PRC-008.4, and TOP-003.4. Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021		NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.												
INSERT YOUR ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTRY (i.e. TO, DP, GO, DP, etc.)												
FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
TPL-001.5.1.R2	RS&W N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TR-001.4 Adopted 2015 Assessment Report 8 6-28-15	5.1.1 - No changes to the requirement from the previous version.	TPL-001.5 Mapping Document	TP	Docket No. R0208-0-000, Issued June 10, 2008, Published TERA	10-Jan-2008	TPL-001.5 Implementation Plan (NOTE: NOT TPL-001.5.1) US Enforcement Date of Standard: July 1, 2003	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-001.5.1.R1	RS&W N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TR-001.4 Adopted 2015 Assessment Report 8 6-28-15	5.1.1 - Changes to the requirement from the previous version.	TPL-001.5 Mapping Document	TP	Docket No. R0208-0-000, Issued June 10, 2008, Published TERA	10-Jan-2008	TPL-001.5 Implementation Plan (NOTE: NOT TPL-001.5.1) US Enforcement Date of Standard: July 1, 2003	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-001.5.1.R3	RS&W N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TR-001.4 Adopted 2015 Assessment Report 8 6-28-15	5.1.1 - No changes to the requirement from the previous version.	TPL-001.5 Mapping Document	TP	Docket No. R0208-0-000, Issued June 10, 2008, Published TERA	10-Jan-2008	TPL-001.5 Implementation Plan (NOTE: NOT TPL-001.5.1) US Enforcement Date of Standard: July 1, 2003	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-001.4.1.R2	RS&W N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TR-001.4 Adopted 2015 Assessment Report 8 6-28-15	5.1.1 - No changes to the requirement from the previous version.	TPL-001.5 Mapping Document	TP	Docket No. R0208-0-000, Issued June 10, 2008, Published TERA	10-Jan-2008	TPL-001.5 Implementation Plan (NOTE: NOT TPL-001.5.1) US Enforcement Date of Standard: July 1, 2003	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-001.5.1.R7	RS&W N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TR-001.4 Adopted 2015 Assessment Report 8 6-28-15	5.1.1 - No changes to the requirement from the previous version.	TPL-001.5 Mapping Document	TP	Docket No. R0208-0-000, Issued June 10, 2008, Published TERA	10-Jan-2008	TPL-001.5 Implementation Plan (NOTE: NOT TPL-001.5.1) US Enforcement Date of Standard: July 1, 2003	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-001.5.1.R5	RS&W N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TR-001.4 Adopted 2015 Assessment Report 8 6-28-15	5.1.1 - No changes to the requirement from the previous version.	TPL-001.5 Mapping Document	TP	Docket No. R0208-0-000, Issued June 10, 2008, Published TERA	10-Jan-2008	TPL-001.5 Implementation Plan (NOTE: NOT TPL-001.5.1) US Enforcement Date of Standard: July 1, 2003	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4 D.A.11.3	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 6-23-20	4 - New regional standard	N/A	TP, PC	Docket No. R0208-0-000, Issued March 19, 2008, Published April 16, 2008	TPL-007.4 Comments on the Technical Information and See August 6, 2020.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4 D.A.11.4	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 6-23-20	4 - New regional standard	N/A	TP, PC	Docket No. R0208-0-000, Issued March 19, 2008, Published April 16, 2008	TPL-007.4 Comments on the Technical Information and See August 6, 2020.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GP, etc.)

FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
TPL-007.4.D.A.11.4	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. New requirement removed	N/A	TP, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4.D.A.7.3	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. No changes to the requirement from previous version.	N/A	TP, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4.D.A.7.4	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. New regional standard.	N/A	TP, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4.D.A.7.5	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. New requirement removed	N/A	TP, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4.B1	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. No changes to the requirement from previous version.	N/A	TP, PA, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4.B10	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4.B11	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. New Standard.	N/A	TP, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4.B12	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. No changes to the requirement from previous version.	N/A	TP, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4.B13	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. No changes to the requirement from previous version.	N/A	TP, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		
TPL-007.4.B2	TPL-007.4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events	TR-007.3 Adopted 2020 Assessment Report 13 6.19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, TP, PA, PC	Docket No. R0200-3-000 Issued March 19, 2000; Published April 16, 2000	TPL-007.4 Comments on the collection of information are: See August 6, 2000.	TPL-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL AS IT IS A DISTRIBUTION PROVIDER (DP)		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTRY (i.e. TO, DP, GP, etc.)

FERC Approved New/Revised/Ratified Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental New Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
											One Time (\$)	Ongoing (\$)	
TS-007.4.R4	TS-007.4.RSAW	TSB: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 6-19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, TP, PC	Docket No. B020-3-000 Issued March 19, 2020. Published April 16, 2020.	TS-007.4 Comments on the collection of information are due August 6, 2020.	TS-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)			
TS-007.4.R4	TS-007.4.RSAW	TSB: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 6-19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, TP, PC	Docket No. B020-3-000 Issued March 19, 2020. Published April 16, 2020.	TS-007.4 Comments on the collection of information are due August 6, 2020.	TS-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)			
TS-007.4.R3	TS-007.4.RSAW	TSB: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 6-19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, TP, PA, PC	Docket No. B020-3-000 Issued March 19, 2020. Published April 16, 2020.	TS-007.4 Comments on the collection of information are due August 6, 2020.	TS-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)			
TS-007.4.R2	TS-007.4.RSAW	TSB: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 6-19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, PC	Docket No. B020-3-000 Issued March 19, 2020. Published April 16, 2020.	TS-007.4 Comments on the collection of information are due August 6, 2020.	TS-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)			
TS-007.4.R1	TS-007.4.RSAW	TSB: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 6-19-20	1. Change to Part 7 include a sentence, change to general for new equipment under Part 7.4 for equipment the address change from Part 7.4. Part 7.4 be submitted to the Compliance Enforcement Agency (CEA) with a request for statement of time if the responsible entity is unable to implement the CEF within the timeframe provided in Part 7.3. The submitted CEF and general the timeline. Part 7.4.1 Circumstances causing the delay for the entity implementing the standard within Part 7.3 and how does compliance is to be met in the event of the responsible entity. Part 7.4.2 Network requirement 7.4.2.1 is deleted. Part 7.4.3 Part 7.4.3 is replaced by the CEF. The submitted comments on the CEF. The responsible entity shall provide a documented response to the request within 30 calendar days of receipt of these comments.	N/A	GO, TO, TP, PC	Docket No. B020-3-000 Issued March 19, 2020. Published April 16, 2020.	TS-007.4 Comments on the collection of information are due August 6, 2020.	TS-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)			
TS-007.4.R0	TS-007.4.RSAW	TSB: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 6-19-20	1. Delete requirement 8.3	N/A	TP, PC	Docket No. B020-3-000 Issued March 19, 2020. Published April 16, 2020.	TS-007.4 Comments on the collection of information are due August 6, 2020.	TS-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)			
TS-007.4.R0	TS-007.4.RSAW	TSB: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 6-19-20	1. No changes to the requirement from previous version.	N/A	TP, PA, PC	Docket No. B020-3-000 Issued March 19, 2020. Published April 16, 2020.	TS-007.4 Comments on the collection of information are due August 6, 2020.	TS-007.4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	NOT APPLICABLE TO CANFOR - NORTHWOOD PULP MILL, AS IT IS A DISTRIBUTION PROVIDER (DP)			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

RESIST YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (in TO, GP, GO, DP, HCL)										Steps 5 and 6 of (R)SOP			
FERC Approved New/Revised/Retired Standard/Requirement	RSAR Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requires Search	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Required Implementation Time Provided and US Enforcement Data	Stakeholder Comments Organizational Activities and Reliability/Sustainability Impact (Please Add-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Cost One Time (\$)	Costs Associated with Cost Ongoing (\$)	BCUC Implementation Time (Please Add-Enter to insert a carriage return in a cell)
CIP-012-1 (R)	RSAR N/A	Cyber Security - Communications between Control Centers To protect the confidentiality and integrity of Real-time Assessment and Real-time monitoring data transferred between Control Centers	New Standard	New Standard - Realtime N/A	N/A	BA, GO, GP, HC TO, TGP	Order No. 8042-2020-0001 Published Nov 17, 2020	07-Apr-21	Implementation Plan Reliability Standard CIP-012-1: Cyber Security - Communications between Control Centers Where approved by an applicable governmental authority is required. Reliability Standard CIP-012-1 shall become effective on the first day of the first calendar quarter that is twenty-four (24) calendar months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Effective Date: July 1, 2022	No incremental changes expected			24 months from the date of approval by the BCUC

Disclaimer: This information has been prepared as input into BC Hydro's fourth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.												
Report Entry Name and Functional Registrations Applicable to Your Entity (i.e. TO, DP, GD, DP, etc.)	Current BCUC Adopted Standards to be Reported	Standard Name and Description	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirement	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time	Relevant Comments, Organizational Activities and Training/Competency Impact	Estimated Incremental Costs Associated with Revision/Requirement	Revised/Requirement	BCUC Implementation Time
BA-003-1 RI	BA-003-2 RSWA	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BA-003-1 Adopted 2015 Assessment Report 9 8-13-15	2. No changes to the requirement from the previous version.	NA	BA, FREQ	Order No. ER05-9-000, issued July 15, 2005	15-Jul-05	BA-003-1 Implementation Day Where approved by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec. 1, 2005	One Time (\$)	On-going (\$)	BCUC Implementation Time (Please Add-Order to insert a carriage return in a cell)
BA-003-2 RI	BA-003-2 RSWA	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BA-003-1 Adopted 2015 Assessment Report 9 8-13-15	2. No changes to the requirement from the previous version.	NA	BA	Order No. ER05-9-000, issued July 15, 2005	15-Jul-05	BA-003-1 Implementation Day Where approved by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec. 1, 2005			
BA-003-3 RI	BA-003-2 RSWA	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BA-003-1 Adopted 2015 Assessment Report 9 8-13-15	2. No changes to the requirement from the previous version.	NA	BA	Order No. ER05-9-000, issued July 15, 2005	15-Jul-05	BA-003-1 Implementation Day Where approved by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec. 1, 2005			
BA-003-4 RI	BA-003-2 RSWA	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BA-003-1 Adopted 2015 Assessment Report 9 8-13-15	2. No changes to the requirement from the previous version.	NA	BA	Order No. ER05-9-000, issued July 15, 2005	15-Jul-05	BA-003-1 Implementation Day Where approved by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec. 1, 2005			
FAC-003-1 RI	RSWA NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-003-1 Adopted 2015 Assessment Report 8 8-8-15	1. No changes to the requirement from the previous version.	NA	TP, FC	Order No. ER03-4-000, issued July 16, 2003	04-Jul-03	FAC-003-1 Implementation Day Reliability Standards FAC-003-1, IRO-010-3, MOD-001-3, MOD-003-2, NAC-001-4, PRC-008-4, and TOP-004-4 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Aug. 1, 2004			
FAC-003-2 RI	RSWA NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-003-1 Adopted 2015 Assessment Report 8 8-8-15	1. No changes to the requirement from the previous version.	NA	GO, TP, FC	Order No. ER03-4-000, issued July 16, 2003	04-Jul-03	FAC-003-1 Implementation Day Reliability Standards FAC-003-2, IRO-010-3, MOD-001-3, MOD-003-2, NAC-001-4, PRC-008-4, and TOP-004-4 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Aug. 1, 2004			One year from the date that Planning Coordinator becomes fully operational.
FAC-003-3 RI	RSWA NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-003-1 Adopted 2015 Assessment Report 8 8-8-15	1. Remove Applicability Last Sentence Only	NA	GP, TO, FC	Order No. ER03-4-000, issued July 16, 2003	04-Jul-03	FAC-003-1 Implementation Day Reliability Standards FAC-003-3, IRO-010-3, MOD-001-3, MOD-003-2, NAC-001-4, PRC-008-4, and TOP-004-4 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Aug. 1, 2004			
FAC-003-4 RI	RSWA NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-003-1 Adopted 2015 Assessment Report 8 8-8-15	1. No changes to the requirement from the previous version.	NA	TO, TP, FC	Order No. ER03-4-000, issued July 16, 2003	04-Jul-03	FAC-003-1 Implementation Day Reliability Standards FAC-003-4, IRO-010-3, MOD-001-3, MOD-003-2, NAC-001-4, PRC-008-4, and TOP-004-4 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Aug. 1, 2004			
FAC-003-5 RI	RSWA NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-003-1 Adopted 2015 Assessment Report 8 8-8-15	1. No changes to the requirement from the previous version.	NA	GO, TP, FC	Order No. ER03-4-000, issued July 16, 2003	04-Jul-03	FAC-003-1 Implementation Day Reliability Standards FAC-003-5, IRO-010-3, MOD-001-3, MOD-003-2, NAC-001-4, PRC-008-4, and TOP-004-4 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Aug. 1, 2004			One year from the date that Planning Coordinator becomes fully operational.
FAC-013-1 RI RETIRE	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 6-4-09	NA - Retired Standard	NA - Retired Standard	FC	Retirement by Order No. 873, issued Sept. 17, 2000		Retirement by Order No. 873, issued Sept. 17, 2000			
FAC-013-2 RI RETIRE	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 6-4-09	NA - Retired Standard	NA - Retired Standard	FC	Retirement by Order No. 873, issued Sept. 17, 2000		Retirement by Order No. 873, issued Sept. 17, 2000			
FAC-013-3 RI RETIRE	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 6-4-09	NA - Retired Standard	NA - Retired Standard	FC	Retirement by Order No. 873, issued Sept. 17, 2000		Retirement by Order No. 873, issued Sept. 17, 2000			
FAC-013-4 RI RETIRE	NA Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 6-4-09	NA - Retired Standard	NA - Retired Standard	FC	Retirement by Order No. 873, issued Sept. 17, 2000		Retirement by Order No. 873, issued Sept. 17, 2000			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.													
REGISTRY ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GP, DP, etc.)	FCRC Approved New/Revised/Amended Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FCRC Approved Revision	FCRC Approved Revision Mapping Document	Functional Applicability of FCRC Approved Standard/Requirement	FCRC Order No., Order Date and Order Publication Date	Effective Date of FCRC Rule Approving the Standard	FCRC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Responsible BCUC Organizational Activities and Reliability/Compliance Impact (Please Add-Enter to insert a carriage return in a cell)	Estimated Incremental Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Please Add-Enter to insert a carriage return in a cell)
FAC-013.1 RS RETIRE	NA Retired		Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential Future Transmission System weaknesses and binding Facilities that could impact the Bulk Electric System (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 6-6-09	NA - Retired Standard	NA - Retired Standard	PC		Recommended for Retirement FCRC 16-000-A & RM19-17-000	Recommended for Retirement Order No. 873 issued Sept 17, 2020	No comments as this requirement is not applicable to our entity.	One Time (\$)	Ongoing (\$)
FAC-013.1B RETIRE	NA Retired		Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential Future Transmission System weaknesses and binding Facilities that could impact the Bulk Electric System (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 6-6-09	NA - Retired Standard	NA - Retired Standard	PC		Recommended for Retirement FCRC 16-000-A & RM19-17-000	Recommended for Retirement Order No. 873 issued Sept 17, 2020	No comments as this requirement is not applicable to our entity.		
INT-006.1.1 ON RETIRE	NA Retired		Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	INT-006.1 Adopted 2011 Assessment Report 3 6-10-11	NA - Retired Standard	NA - Retired Standard	PSE	FCRC 16-000 Issued Sept 26, 2020	Recommended for Retirement FCRC 16-000-A & RM19-17-000	Recommended for Retirement Order No. 873 issued Sept 17, 2020	No comments as this requirement is not applicable to our entity.		
INT-006.1.1.2 RETIRE	NA Retired		Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	FAC-014.1 Adopted 2011 Assessment Report 3 6-10-11	NA - Retired Standard	NA - Retired Standard	PSE	FCRC 16-000 Issued Sept 26, 2020	Recommended for Retirement FCRC 16-000-A & RM19-17-000	Recommended for Retirement Order No. 873 issued Sept 17, 2020	No comments as this requirement is not applicable to our entity.		
INT-006.1.1.3 RETIRE	NA Retired		Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	FAC-014.1 Adopted 2011 Assessment Report 3 6-10-11	NA - Retired Standard	NA - Retired Standard	BA	FCRC 16-000 Issued Sept 26, 2020	Recommended for Retirement FCRC 16-000-A & RM19-17-000	Recommended for Retirement Order No. 873 issued Sept 17, 2020	No comments as this requirement is not applicable to our entity.		
INT-006.5.1	RS&W NA		Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006.5 Adopted 2015 Assessment Report 8 8-30-15	No changes to this requirement from previous version	NA	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006.5 Implementation Plan Reliability Standards FAC-008-A, INT-006-5, INT-009-3, IRO-102-A, PRO-004-6, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
INT-006.5.2	RS&W NA		Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006.5 Adopted 2015 Assessment Report 8 8-30-15	No changes to this requirement from previous version	NA	BA, TSP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006.5 Implementation Plan Reliability Standards FAC-008-A, INT-006-5, INT-009-3, IRO-102-A, PRO-004-6, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
INT-006.5.3	RS&W NA		Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006.5 Adopted 2015 Assessment Report 8 8-30-15	Remove Part 1.1 of Reliability Activities Section a. Reliability Assessment. The Reliability Activities section requires that Reliability Assessment be done for all interchanges that are implemented.	NA	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006.5 Implementation Plan Reliability Standards FAC-008-A, INT-006-5, INT-009-3, IRO-102-A, PRO-004-6, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
INT-006.5.4 Revised	RS&W NA		Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006.5 Adopted 2015 Assessment Report 8 8-30-15	Remove requirement 1.1.1 in section. This requirement is now contained elsewhere.	NA	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006.5 Implementation Plan Reliability Standards FAC-008-A, INT-006-5, INT-009-3, IRO-102-A, PRO-004-6, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
INT-006.5.4C Revised	RS&W NA		Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006.5 Adopted 2015 Assessment Report 8 8-30-15	Remove requirement 1.1.1 in section. This requirement is now contained elsewhere.	NA	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006.5 Implementation Plan Reliability Standards FAC-008-A, INT-006-5, INT-009-3, IRO-102-A, PRO-004-6, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
INT-009.1.1 R2	INT-009.2.1 RS&W		Title: Implementation of Interchange To ensure that Balancing Authorities implement the interchange as agreed upon in the interchange confirmation process.	INT-009.1 Adopted 2008 Assessment Report 1 6-6-09	NA - Retired Standard	NA - Retired Standard	BA	Docket No. RM20-4-000 INT-009.2.1	NO-C01-20	Recommended for Retirement per Docket No. RM20-4-000	No comments as this requirement is not applicable to our entity.		
INT-009.1.1	RS&W NA		Title: Implementation of Interchange To ensure that Balancing Authorities implement the interchange as agreed upon in the interchange confirmation process.	INT-009.2 Adopted 2015 Assessment Report 8 8-30-15	Remove reference to INT-009.1	NA	BA	Docket No. RM20-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM20-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-009.2 Implementation Plan Reliability Standards FAC-008-A, INT-006-5, INT-009-3, IRO-102-A, PRO-004-6, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
INT-009.1.1A	RS&W NA		Title: Implementation of Interchange To ensure that Balancing Authorities implement the interchange as agreed upon in the interchange confirmation process.	INT-009.2.1 Adopted 2015 Assessment Report 8 8-30-15	No changes to this requirement from previous version	NA	BA	Docket No. RM20-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM20-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-009.2.1 Implementation Plan Reliability Standards FAC-008-A, INT-006-5, INT-009-3, IRO-102-A, PRO-004-6, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
INT-010.1.1B	INT-010.2.1 RS&W		Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or Implemented Interchange to address reliability.	INT-010.1 Adopted 2008 Assessment Report 1 6-6-09	NA - Retired Standard	NA - Retired Standard	BA		Recommended for Retirement FCRC 16-000-A & RM19-17-000	Recommended for Retirement Order No. 873 issued Sept 17, 2020	No comments as this requirement is not applicable to our entity.		
INT-010.2.1 R2	INT-010.2.1 RS&W		Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or Implemented Interchange to address reliability.	INT-010.1 Adopted 2008 Assessment Report 1 6-6-09	NA - Retired Standard	NA - Retired Standard	BA		Recommended for Retirement FCRC 16-000-A & RM19-17-000	Recommended for Retirement Order No. 873 issued Sept 17, 2020	No comments as this requirement is not applicable to our entity.		
INT-010.2.1 R3	INT-010.2.1 RS&W		Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or Implemented Interchange to address reliability.	INT-010.1 Adopted 2008 Assessment Report 1 6-6-09	NA - Retired Standard	NA - Retired Standard	BA		Recommended for Retirement FCRC 16-000-A & RM19-17-000	Recommended for Retirement Order No. 873 issued Sept 17, 2020	No comments as this requirement is not applicable to our entity.		

Disclaimer: This information has been prepared as input into BC Hydro's biennial assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.

REGISTRY ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.)	FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Consent/BCUC Adopted/Retired/To be Repealed	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirement	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Relevant Comments Organizational Activities and Reliability/Compliance Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Implementation Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
BC-015.3.R2		RS&W N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	IR0-032-2 Adopted 2017 Assessment Report 10 6-9-17	3- No changes to the requirement from previous version	NA	RC	Order No. RC00-4-000 Issued Oct 30, 2000	10-30-00	RC-015.3 Implementation Plan	No comments as this requirement is not applicable to our entity.	One Time (\$)	Ongoing (\$)
BC-016.3.R4		RS&W N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	IR0-032-2 Adopted 2017 Assessment Report 10 6-9-17	3- Remove applicability to Load Services Units	NA	RC	Order No. RC00-4-000 Issued Oct 30, 2000	10-30-00	RC-015.3 Implementation Plan	No comments as this requirement is not applicable to our entity.		
BC-016.3.R5		RS&W N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	IR0-032-2 Adopted 2017 Assessment Report 10 6-9-17	3- Remove applicability to Load Services Units	NA	BA, DP, GO, GOP, TO, TDP	Order No. RC00-4-000 Issued Oct 30, 2000	10-30-00	RC-015.3 Implementation Plan	No incremental changes expected.		12 months from the date of adoption by the BCUC.
MCO-030.0.R1		MCO-030.0.RS&W	Title: Providing Interruptible Demands and Direct Control Level Management Data to System Operators and Reliability Coordinators To ensure that assessments and validation of past events and databases can be performed, reporting of actual demand data is needed. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcement for continued reliability. In addition to assist in proper real-time operating load information related to controllable Demand-Side Management programs is needed.	MCO-030-0 Adopted 2016 Assessment Report 1 6-4-16	NA - Retired Standard	NA - Retired Standard	LSE, RP, TP	Order No. RM00-16-000 Issued Mar 16, 2000	Retirement by Order No. 17-000 M16-16-000 & M17-17-000	Retirement by Defeatment. Order No. 17-000 Issued Feb 11, 2000	No comments as this requirement is not applicable to our entity.		
MCO-030.0.R1		MCO-030.0.RS&W	Title: Providing Interruptible Demands and Direct Control Level Management Data to System Operators and Reliability Coordinators To ensure that assessments and validation of past events and databases can be performed, reporting of actual demand data is needed. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcement for continued reliability. In addition to assist in proper real-time operating load information related to controllable Demand-Side Management programs is needed.	MCO-030-0 Adopted 2016 Assessment Report 1 6-4-16	NA - Retired Standard	NA - Retired Standard	TSP	Order No. RM00-16-000 Issued Mar 16, 2000	Retirement by Order No. 17-000 M16-16-000 & M17-17-000	Retirement by Defeatment. Order No. 17-000 Issued Feb 11, 2000	No comments as this requirement is not applicable to our entity.		
MCO-011.3.R4		RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and responders of that data.	MCO-011-3 Adopted 2017 Assessment Report 10 6-9-17	3- Remove applicability to Load Services Units	NA	BA, PC	Order No. RC00-4-000 Issued Oct 30, 2000	10-30-00	MCO-011.3 Implementation Plan	No comments as this requirement is not applicable to our entity.		
MCO-011.3.R2		RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and responders of that data.	MCO-011-3 Adopted 2017 Assessment Report 10 6-9-17	3- No changes to the requirement from previous version	NA	BA, TP, RP, DP, PC	Order No. RC00-4-000 Issued Oct 30, 2000	10-30-00	MCO-011.3 Implementation Plan	No comments as this requirement is not applicable to our entity.		
MCO-011.3.R3		RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and responders of that data.	MCO-011-3 Adopted 2017 Assessment Report 10 6-9-17	3- No changes to the requirement from previous version	NA	BA, PC	Order No. RC00-4-000 Issued Oct 30, 2000	10-30-00	MCO-011.3 Implementation Plan	No comments as this requirement is not applicable to our entity.		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.													
RS&T YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, GP, etc.)	FERC Approved Non-Prevalent Standard/Requirement	RS&T Link	Standard Name and Description	Current BCUC Adopted Requirements to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirement	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Making the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Relevant Comments Organizational Activities and Training/Competency Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
												One Time (\$)	Ongoing (\$)
	MCO-031.3-F4	RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enhance the responsibilities and obligations of requestors and respondents of that data.	MCO-031.3 Adopted 2017 Assessment Report 10 8-3-17	3- No changes to the requirement from previous version	NA	BA, TP, RP, GP, PC	Order No. ER00-4-000 March 28, 2000	30-Oct-00	MCO-031.3 Implementation Date Reliability Standards FAC-023.3, IRO-013-3, MCO-031.3, MCO-033.2, NUC-001-4, PRC-008-4, and TOP-008-4 (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority) (Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction) US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
	MCO-033.1-F1	RS&W N/A	Title: Steady-State and Dynamic System Model Validation To establish consistent validation requirements to facilitate the collection of accurate data and building of planning models to analyze the reliability of the interconnected transmission system.	MCO-033.1 Adopted 2015 Assessment Report 8 8-3-15	3- No changes to the requirement from previous version	NA	PC	Order No. ER00-4-000 March 28, 2000	30-Oct-00	MCO-033.1 Implementation Date Reliability Standards FAC-023.3, IRO-013-3, MCO-031.3, MCO-033.2, NUC-001-4, PRC-008-4, and TOP-008-4 (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority) (Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction) US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
	MCO-033.2-F4	RS&W N/A	Title: Steady-State and Dynamic System Model Validation To establish consistent validation requirements to facilitate the collection of accurate data and building of planning models to analyze the reliability of the interconnected transmission system.	MCO-033.2 Adopted 2015 Assessment Report 8 8-3-15	3- No changes to the requirement from previous version	NA	RL, TDP	Order No. ER00-4-000 March 28, 2000	30-Oct-00	MCO-033.2 Implementation Date Reliability Standards FAC-023.3, IRO-013-3, MCO-031.3, MCO-033.2, NUC-001-4, PRC-008-4, and TOP-008-4 (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority) (Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction) US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.		
	MCO-033.2-F4	RS&W N/A	Title: Steady-State and Dynamic System Model Validation To establish consistent validation requirements to facilitate the collection of accurate data and building of planning models to analyze the reliability of the interconnected transmission system.	MCO-033.2 Adopted 2015 Assessment Report 8 8-3-15	3- No changes to the requirement from previous version	NA	TO, TOP, TP, TSP, BA, RC, DP, GP, PC	Order No. ER00-4-000 March 28, 2000	30-Oct-00	NA	No comments as this requirement is not applicable to our entity.		
	PRC-004.5-F1	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004.5 Adopted 2014 Assessment Report 9 8-3-14	3- No changes to the requirement from previous version	NA	DP, GO, TO	Order No. RM13-16-000 A, B March 27, 2013	Order No. RM13-16-000 A, B Effective Date: 14-2013	PRC-004.5 Implementation Date Reliability Standards FAC-004.4, INT-008-5, INT-009-3, IRO-002-A, PRC-004-6, TOP-001-5, and VAR-001-6 (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority) US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	3 months from the date of adoption by the BCUC.	
	PRC-004.5-F2	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004.5 Adopted 2014 Assessment Report 9 8-3-14	3- No changes to the requirement from previous version	NA	DP, GO, TO	Order No. RM13-16-000 A, B March 27, 2013	Order No. RM13-16-000 A, B Effective Date: 14-2013	PRC-004.5 Implementation Date Reliability Standards FAC-004.4, INT-008-5, INT-009-3, IRO-002-A, PRC-004-6, TOP-001-5, and VAR-001-6 (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority) US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	3 months from the date of adoption by the BCUC.	
	PRC-004.5-F3	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004.5 Adopted 2014 Assessment Report 9 8-3-14	3- No changes to the requirement from previous version	NA	DP, GO, TO	Order No. RM13-16-000 A, B March 27, 2013	Order No. RM13-16-000 A, B Effective Date: 14-2013	PRC-004.5 Implementation Date Reliability Standards FAC-004.4, INT-008-5, INT-009-3, IRO-002-A, PRC-004-6, TOP-001-5, and VAR-001-6 (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority) US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	3 months from the date of adoption by the BCUC.	
	PRC-004.5-F4	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004.5 Adopted 2014 Assessment Report 9 8-3-14	3- No changes to the requirement from previous version	NA	DP, GO, TO	Order No. RM13-16-000 A, B March 27, 2013	Order No. RM13-16-000 A, B Effective Date: 14-2013	PRC-004.5 Implementation Date Reliability Standards FAC-004.4, INT-008-5, INT-009-3, IRO-002-A, PRC-004-6, TOP-001-5, and VAR-001-6 (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority) US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	3 months from the date of adoption by the BCUC.	
	PRC-004.5-F5	RS&W N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004.5 Adopted 2014 Assessment Report 9 8-3-14	3- No changes to the requirement from previous version	NA	DP, GO, TO	Order No. RM13-16-000 A, B March 27, 2013	Order No. RM13-16-000 A, B Effective Date: 14-2013	PRC-004.5 Implementation Date Reliability Standards FAC-004.4, INT-008-5, INT-009-3, IRO-002-A, PRC-004-6, TOP-001-5, and VAR-001-6 (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority) US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	3 months from the date of adoption by the BCUC.	

Disclaimer: This information has been prepared as input into BC Hydro's fourth-year assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.																
REGISTRY ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)	FCR Approved New/Revised/Amended Standard/Requirement	RS&W Link	Standard Name and Description	FCR-003 Adopted 2018 Assessment Report 11 8-23-18	Consent/BCUC Adopted/Revisions to be Reported	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirement Item	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Risk Approving the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Responsible Comments Organizational Activities and Training/Competency Impact (Please Add-Enter to insert a carriage return in a cell)	Estimated Implementation Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Please Add-Enter to insert a carriage return in a cell)		
FCR-006-4-D-A-3	RS&W N/A		Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCR-003 Adopted 2018 Assessment Report 11 8-23-18	4- No changes to the requirement from previous version	NA	NA	PC	Order No. ER00-4-000, issued Oct 26, 2000	04-24-20	FCR-006-4 Implementation Plan	Reliability Standards FAC-003.3, (RO-010.3, MOD-031.3, MOD-035.2, NUC-001.4, PRC-008-4, and TOP-009-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.	One Time (\$)	Ongoing (\$)	
FCR-006-4-D-A-4	RS&W N/A		Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCR-003 Adopted 2018 Assessment Report 11 8-23-18	4- Update reference to FCR-006-4	NA	NA	PC	Order No. ER00-4-000, issued Oct 26, 2000	04-24-20	FCR-006-4 Implementation Plan	Reliability Standards FAC-003.3, (RO-010.3, MOD-031.3, MOD-035.2, NUC-001.4, PRC-008-4, and TOP-009-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCR-006-4-D-A-5	RS&W N/A		Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCR-003 Adopted 2018 Assessment Report 11 8-23-18	4- No changes to the requirement from previous version	NA	NA	DP, DPUP, FC, TO	Order No. ER00-4-000, issued Oct 26, 2000	04-24-20	FCR-006-4 Implementation Plan	Reliability Standards FAC-003.3, (RO-010.3, MOD-031.3, MOD-035.2, NUC-001.4, PRC-008-4, and TOP-009-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCR-006-4-D-A-11	RS&W N/A		Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCR-003 Adopted 2018 Assessment Report 11 8-23-18	4- No changes to the requirement from previous version	NA	NA	PC	Order No. ER00-4-000, issued Oct 26, 2000	04-24-20	FCR-006-4 Implementation Plan	Reliability Standards FAC-003.3, (RO-010.3, MOD-031.3, MOD-035.2, NUC-001.4, PRC-008-4, and TOP-009-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCR-006-4-D-A-14	RS&W N/A		Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCR-003 Adopted 2018 Assessment Report 11 8-23-18	4- No changes to the requirement from previous version	NA	NA	PC	Order No. ER00-4-000, issued Oct 26, 2000	04-24-20	FCR-006-4 Implementation Plan	Reliability Standards FAC-003.3, (RO-010.3, MOD-031.3, MOD-035.2, NUC-001.4, PRC-008-4, and TOP-009-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCR-006-4-D-A-4	RS&W N/A		Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCR-003 Adopted 2018 Assessment Report 11 8-23-18	4- No changes to the requirement from previous version	NA	NA	PA, PC	Order No. ER00-4-000, issued Oct 26, 2000	04-24-20	FCR-006-4 Implementation Plan	Reliability Standards FAC-003.3, (RO-010.3, MOD-031.3, MOD-035.2, NUC-001.4, PRC-008-4, and TOP-009-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCR-006-4-D-A-1	RS&W N/A		Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCR-003 Adopted 2018 Assessment Report 11 8-23-18	4- No changes to the requirement from previous version	NA	NA	PC	Order No. ER00-4-000, issued Oct 26, 2000	04-24-20	FCR-006-4 Implementation Plan	Reliability Standards FAC-003.3, (RO-010.3, MOD-031.3, MOD-035.2, NUC-001.4, PRC-008-4, and TOP-009-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			

Disclaimer: This information has been prepared as input into BC Hydro's fourth-year assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.

REGISTRY ENTRY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e., TO, DP, GO, DP, etc.)	FCRC Approved New/Revised/Amended Standard/Requirement	RS&W Link	Standard Name and Description	FCRC Order #	Current BCUC Adopted Standards to be Superseded	FCRC Approved Revision	FCRC Approved Revision Mapping Document	Functional Applicability of FCRC Approved Standard/Requirement	FCRC Order No., Order Date and Order Publication Date	Effective Date of FCRC Risk Approving the Standard	FCRC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Responsible Comments Organizational Activities and Training/Competency Impact (Please Add-Enter to insert a carriage return in a cell)	Estimated Implementation Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Please Add-Enter to insert a carriage return in a cell)	
FCRC-006-4-F1D	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCRC-006-3 Adopted 2018 Assessment Report 11 6-3-18	FCRC-006-3	FCRC-006-3	FCRC-006-3	FCRC-006-3	FC	Order No. FCRC-0-000 Issued Oct 30, 2009	06-01-20	FCRC-006-4 Implementation Plan Reliability Standards FAC-002-3, (RO-010-3, MOD-011-3, MOD-035-2, NUC-001-4, PRC-008-4, and TOP-008-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.	One Time (\$)	Ongoing (\$)	
FCRC-006-4-F2	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCRC-006-3 Adopted 2018 Assessment Report 11 6-3-18	FCRC-006-3	FCRC-006-3	FCRC-006-3	FCRC-006-3	FC	Order No. FCRC-0-000 Issued Oct 30, 2009	06-01-20	FCRC-006-4 Implementation Plan Reliability Standards FAC-002-3, (RO-010-3, MOD-011-3, MOD-035-2, NUC-001-4, PRC-008-4, and TOP-008-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCRC-006-4-F3	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCRC-006-3 Adopted 2018 Assessment Report 11 6-3-18	FCRC-006-3	FCRC-006-3	FCRC-006-3	FCRC-006-3	FC	Order No. FCRC-0-000 Issued Oct 30, 2009	06-01-20	FCRC-006-4 Implementation Plan Reliability Standards FAC-002-3, (RO-010-3, MOD-011-3, MOD-035-2, NUC-001-4, PRC-008-4, and TOP-008-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCRC-006-4-F4	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCRC-006-3 Adopted 2018 Assessment Report 11 6-3-18	FCRC-006-3	FCRC-006-3	FCRC-006-3	FCRC-006-3	FC	Order No. FCRC-0-000 Issued Oct 30, 2009	06-01-20	FCRC-006-4 Implementation Plan Reliability Standards FAC-002-3, (RO-010-3, MOD-011-3, MOD-035-2, NUC-001-4, PRC-008-4, and TOP-008-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCRC-006-4-F5	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCRC-006-3 Adopted 2018 Assessment Report 11 6-3-18	FCRC-006-3	FCRC-006-3	FCRC-006-3	FCRC-006-3	FC	Order No. FCRC-0-000 Issued Oct 30, 2009	06-01-20	FCRC-006-4 Implementation Plan Reliability Standards FAC-002-3, (RO-010-3, MOD-011-3, MOD-035-2, NUC-001-4, PRC-008-4, and TOP-008-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCRC-006-4-F6	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCRC-006-3 Adopted 2018 Assessment Report 11 6-3-18	FCRC-006-3	FCRC-006-3	FCRC-006-3	FCRC-006-3	FC	Order No. FCRC-0-000 Issued Oct 30, 2009	06-01-20	FCRC-006-4 Implementation Plan Reliability Standards FAC-002-3, (RO-010-3, MOD-011-3, MOD-035-2, NUC-001-4, PRC-008-4, and TOP-008-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCRC-006-4-F7	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCRC-006-3 Adopted 2018 Assessment Report 11 6-3-18	FCRC-006-3	FCRC-006-3	FCRC-006-3	FCRC-006-3	FC	Order No. FCRC-0-000 Issued Oct 30, 2009	06-01-20	FCRC-006-4 Implementation Plan Reliability Standards FAC-002-3, (RO-010-3, MOD-011-3, MOD-035-2, NUC-001-4, PRC-008-4, and TOP-008-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
FCRC-006-4-F8	RS&W N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FCRC-006-3 Adopted 2018 Assessment Report 11 6-3-18	FCRC-006-3	FCRC-006-3	FCRC-006-3	FCRC-006-3	FC	Order No. FCRC-0-000 Issued Oct 30, 2009	06-01-20	FCRC-006-4 Implementation Plan Reliability Standards FAC-002-3, (RO-010-3, MOD-011-3, MOD-035-2, NUC-001-4, PRC-008-4, and TOP-008-4) (Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard), or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			

Disclaimer: This information has been prepared as input into BC Hydro's fourth-year assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.

Report Your Entry Name and Functional Registrations Applicable to Your Entry (i.e. TO, DP, GO, DP, etc.)	FCRC Approved Non-Preemptive Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Requirements to be Reported	FCRC Approved Revision	FCRC Approved Revision Mapping Document	Functional Applicability of FCRC Approved Standard/Requirement	FCRC Order No., Order Date and Order Publication Date	Effective Date of FCRC Rule Approving the Standard	FCRC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Responsible Corporate Organizational Activities and Reliability/Security Impact (Please Add-Enter to insert a carriage return in a cell)	Estimated Incremental Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Please Add-Enter to insert a carriage return in a cell)
												One Time (\$)	Ongoing (\$)
TOP-001-4-R13	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- No changes to the requirement from previous version	TOP-001-4 Mapping Document	TOP	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
TOP-001-4-R14	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- No changes to the requirement from previous version	TOP-001-4 Mapping Document	TOP	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
TOP-001-4-R15	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- No changes to the requirement from previous version	TOP-001-4 Mapping Document	TOP	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
TOP-001-4-R16	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- No changes to the requirement from previous version	TOP-001-4 Mapping Document	TOP	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
TOP-001-4-R17	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- No changes to the requirement from previous version	TOP-001-4 Mapping Document	BA	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
TOP-001-4-R18	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- No changes to the requirement from previous version	TOP-001-4 Mapping Document	TOP	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
TOP-001-4-R19 Replaced	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- Remove requirement as it is obsolete. This requirement is now combined in another.	TOP-001-4 Mapping Document		Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
TOP-001-4-R20	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- No changes to the requirement from previous version	TOP-001-4 Mapping Document	BA	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
TOP-001-4-R21	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- No changes to the requirement from previous version	TOP-001-4 Mapping Document	TOP	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			
TOP-001-4-R22 Replaced	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-13-18	1- Remove requirement as it is obsolete. This requirement is now combined in another.	TOP-001-4 Mapping Document		Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Issued Sept 17, 2020	Doctel No. RMTS-16-000 A, RMTS-17-000, RMTS-17-000 Effective Dec 18, 2020	TOP-001-4 Implementation Plan Reliability Standards FAC-004-A, INT-006-5, INT-009-3, IRO-002-A, PROC-046, TOP-001-5, and VAR-001-6 (When approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entity.			

Disclaimer: This information has been prepared as input into BC Hydro's fourth-year assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.													
Report Your Entry Name and Functional Registrations Applicable to Your Entry (i.e. TO, DP, GO, DP, etc.)	Capex/Scott/Wind LP (GO/GO)	FERC Approved Non-Preventive Standard/Requirement	RS&W Link	Standard Name and Description	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Requirement	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Period and US Enforcement Date	Responsible Corporate Organizational Activities and Reliability/Sustainability Impact (Please Add-Enter to insert a carriage return in a cell)	Estimated Implementation Costs Associated with Revision/New Standard/Requirement, if any	BCUC Implementation Time (Please Add-Enter to insert a carriage return in a cell)
												One Time (\$)	Ongoing (\$)
TOP-001-1-F03	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-1-F03	TOP-001-1-F03 Assessment Report 11 8-13-18	3- No changes to the requirement from previous version	TOP-001-1-F03 Mapping Document	BA	Docket No. RM19-35-000 & RM19-37-000 Issued Sept 17, 2020	Docket No. RM19-35-000 & RM19-37-000 Effective Dec 18, 2020	TOP-001-1-F03 Implementation Plan Reliability Standards FAC-008-4, INT-008-5, INT-009-3, IRO-002-4, PROC-044, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entry.		
TOP-001-1-F04	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-1-F04	TOP-001-1-F04 Assessment Report 11 8-13-18	3- No changes to the requirement from previous version	TOP-001-1-F04 Mapping Document	BA	Docket No. RM19-35-000 & RM19-37-000 Issued Sept 17, 2020	Docket No. RM19-35-000 & RM19-37-000 Effective Dec 18, 2020	TOP-001-1-F04 Implementation Plan Reliability Standards FAC-008-4, INT-008-5, INT-009-3, IRO-002-4, PROC-044, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entry.		
TOP-001-1-F05	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-1-F05	TOP-001-1-F05 Assessment Report 11 8-13-18	3- No changes to the requirement from previous version	TOP-001-1-F05 Mapping Document	BA, DP, GO/DP	Docket No. RM19-35-000 & RM19-37-000 Issued Sept 17, 2020	Docket No. RM19-35-000 & RM19-37-000 Effective Dec 18, 2020	TOP-001-1-F05 Implementation Plan Reliability Standards FAC-008-4, INT-008-5, INT-009-3, IRO-002-4, PROC-044, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.		2 months from the date of adoption by the BCUC.
TOP-001-1-F06	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-1-F06	TOP-001-1-F06 Assessment Report 11 8-13-18	3- No changes to the requirement from previous version	TOP-001-1-F06 Mapping Document	BA, DP, GO/DP	Docket No. RM19-35-000 & RM19-37-000 Issued Sept 17, 2020	Docket No. RM19-35-000 & RM19-37-000 Effective Dec 18, 2020	TOP-001-1-F06 Implementation Plan Reliability Standards FAC-008-4, INT-008-5, INT-009-3, IRO-002-4, PROC-044, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.		2 months from the date of adoption by the BCUC.
TOP-001-1-F07	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-1-F07	TOP-001-1-F07 Assessment Report 11 8-13-18	3- No changes to the requirement from previous version	TOP-001-1-F07 Mapping Document	DP, GO/DP, TOP	Docket No. RM19-35-000 & RM19-37-000 Issued Sept 17, 2020	Docket No. RM19-35-000 & RM19-37-000 Effective Dec 18, 2020	TOP-001-1-F07 Implementation Plan Reliability Standards FAC-008-4, INT-008-5, INT-009-3, IRO-002-4, PROC-044, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.		2 months from the date of adoption by the BCUC.
TOP-001-1-F08	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-1-F08	TOP-001-1-F08 Assessment Report 11 8-13-18	3- No changes to the requirement from previous version	TOP-001-1-F08 Mapping Document	DP, GO/DP, TOP	Docket No. RM19-35-000 & RM19-37-000 Issued Sept 17, 2020	Docket No. RM19-35-000 & RM19-37-000 Effective Dec 18, 2020	TOP-001-1-F08 Implementation Plan Reliability Standards FAC-008-4, INT-008-5, INT-009-3, IRO-002-4, PROC-044, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.		2 months from the date of adoption by the BCUC.
TOP-001-1-F09	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-1-F09	TOP-001-1-F09 Assessment Report 11 8-13-18	3- No changes to the requirement from previous version	TOP-001-1-F09 Mapping Document	TOP	Docket No. RM19-35-000 & RM19-37-000 Issued Sept 17, 2020	Docket No. RM19-35-000 & RM19-37-000 Effective Dec 18, 2020	TOP-001-1-F09 Implementation Plan Reliability Standards FAC-008-4, INT-008-5, INT-009-3, IRO-002-4, PROC-044, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entry.		
TOP-001-1-F10	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-1-F10	TOP-001-1-F10 Assessment Report 11 8-13-18	3- No changes to the requirement from previous version	TOP-001-1-F10 Mapping Document	TOP	Docket No. RM19-35-000 & RM19-37-000 Issued Sept 17, 2020	Docket No. RM19-35-000 & RM19-37-000 Effective Dec 18, 2020	TOP-001-1-F10 Implementation Plan Reliability Standards FAC-008-4, INT-008-5, INT-009-3, IRO-002-4, PROC-044, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entry.		
TOP-001-1-F11	RS&W N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-1-F11	TOP-001-1-F11 Assessment Report 11 8-13-18	3- No changes to the requirement from previous version	TOP-001-1-F11 Mapping Document	BA, TOP	Docket No. RM19-35-000 & RM19-37-000 Issued Sept 17, 2020	Docket No. RM19-35-000 & RM19-37-000 Effective Dec 18, 2020	TOP-001-1-F11 Implementation Plan Reliability Standards FAC-008-4, INT-008-5, INT-009-3, IRO-002-4, PROC-044, TOP-001-5, and VAR-001-6 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entry.		
TOP-001-1-F12	RS&W N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfil their operational and planning responsibilities.	TOP-001-1-F12	TOP-001-1-F12 Assessment Report 10 9-26-17	3- No changes to the requirement from previous version	NA	TOP	Docket No. RP20-0-000 Issued Oct 29, 2020	NA Oct 29, 2020	TOP-001-1-F12 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-01-3, MOD-03-3, NAC-01-4, PROC-044, and TOP-001-4 (where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is included in the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No comments as this requirement is not applicable to our entry.		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FERC Approved New/Revised/Retired Standard/Requirement													
FERC Approved New/Revised/Retired Standard/Requirement	RS&L Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments, Organizational Activities and Reliability/Subsidiary Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Cost One Time (\$)	Cost Ongoing (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
CP-012-1-R1	RS&L NA	Cyber Security - Communications between Control Centers To protect the confidentiality and integrity of Real-time Assessment and Real-time monitoring data transmitted between Control Centers	New Standard	New Standard - Real-time NA	NA	NA, GO, GOP, RC, TO, TGP	Order No. 2011-2-030-006 Published (2011-07-06)	07-Apr-20	Implementation Date Reliability Standard CP-012-1- Cyber Security - Communications between Control Centers Where approved by an applicable governmental authority, is required. Reliability Standard CP-012-1 shall become effective on the first day of the first calendar quarter that is twenty-four (24) calendar months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Effective Date: July 1, 2012	Forti&BC will raise to protect the confidentiality and integrity of Real-time Assessment and Real-time monitoring data transmitted between control centres (Forti&BC and BC Hydro). Forti&BC documentation will need to be created and/or updated.	\$20,000 - \$40,000	0	Recommended effective date is 12-24 months after BCUC approval.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FormBC Inc. (DP, GO, GOP, RP, TO, TOP, TP, TSP)											
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$) One Time (\$) Ongoing (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
BAL-003-2 R1	BAL-003-2 R5AW	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-003-1.1 Adopted 2015 Assessment Report 9 R.32-36	2. No changes to the requirement from the previous version.	N/A	BA, FRSG	15-Jul-20	BAL-003-2 Implementation Plan	Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard - Dec 1, 2020	FortisBC is not registered for this function. N/A	N/A
BAL-003-2 R2	BAL-003-2 R5AW	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-003-1.1 Adopted 2015 Assessment Report 9 R.32-36	2. No changes to the requirement from the previous version.	N/A	BA	15-Jul-20	BAL-003-2 Implementation Plan	Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard - Dec 1, 2020	FortisBC is not registered for this function. N/A	N/A
BAL-003-2 R3	BAL-003-2 R5AW	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-003-1.1 Adopted 2015 Assessment Report 9 R.32-36	2. No changes to the requirement from the previous version.	N/A	BA	15-Jul-20	BAL-003-2 Implementation Plan	Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard - Dec 1, 2020	FortisBC is not registered for this function. N/A	N/A
BAL-003-2 R4	BAL-003-2 R5AW	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-003-1.1 Adopted 2015 Assessment Report 9 R.32-36	2. No changes to the requirement from the previous version.	N/A	BA	15-Jul-20	BAL-003-2 Implementation Plan	Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard - Dec 1, 2020	FortisBC is not registered for this function. N/A	N/A
BAL-003-2 R5	BAL-003-2 R5AW	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-003-1.1 Adopted 2015 Assessment Report 9 R.32-36	2. No changes to the requirement from the previous version.	N/A	BA	15-Jul-20	BAL-003-2 Implementation Plan	Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard - Dec 1, 2020	FortisBC is not registered for this function. N/A	N/A
FAC-002-3 R1	RSAW N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 Adopted 2015 Assessment Report 8 R.38-35	3. No changes to the requirement from previous version.	N/A	TP, PC	30-Oct-20	FAC-002-3 Implementation Plan	Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-005-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard - Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
FAC-002-3 R2	RSAW N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 Adopted 2015 Assessment Report 8 R.38-35	3. No changes to the requirement from previous version.	N/A	GO, TP, PC	30-Oct-20	FAC-002-3 Implementation Plan	Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-005-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard - Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
FAC-002-3 R3	RSAW N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 Adopted 2015 Assessment Report 8 R.38-35	3. Remove Applicability Load Service Entry.	N/A	DP, TO, PC	30-Oct-20	FAC-002-3 Implementation Plan	Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-005-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard - Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Form BC Inc. (DP, GO, GOP, RP, TO, TOP, TP, TSP)													
FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving Process	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental New Costs Associated with Revision New Standard/Requirement, if any (\$) <table border="1"> <tr> <th>One Time (\$)</th> <th>Ongoing (\$)</th> </tr> </table>	One Time (\$)	Ongoing (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
One Time (\$)	Ongoing (\$)												
FAC-002.3 RI	RS&W N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002.2 Adopted 2015 Assessment Report 8 R.38-15	No changes to the requirement from previous version.	N/A	TO, TP, PC	30-Oct-20	FAC-002.3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MCO-031-3, MCO-033-2, NUC-011-4, PRC-004-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	
FAC-002.3 RS	RS&W N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002.2 Adopted 2015 Assessment Report 8 R.38-15	No changes to the requirement from previous version.	N/A	GO, TP, PC	30-Oct-20	FAC-002.3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MCO-031-3, MCO-033-2, NUC-011-4, PRC-004-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	
FAC-013.2 R1 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	Recommended retirement date immediately after BCUC approval.	
FAC-013.2 R2 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	Recommended retirement date immediately after BCUC approval.	
FAC-013.2 R3 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	Recommended retirement date immediately after BCUC approval.	
FAC-013.2 R4 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	Recommended retirement date immediately after BCUC approval.	
FAC-013.2 R5 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	Recommended retirement date immediately after BCUC approval.	
FAC-013.2 R6 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	Recommended retirement date immediately after BCUC approval.	
FAC-013.2 R7 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013.1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	PC	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	Recommended retirement date immediately after BCUC approval.	
NT.004.3.1 R1 RETIRE	N/A Retired	Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	NT.004.2 Adopted 2011 Assessment Report 3 G.162-11	N/A - Retired Standard	N/A - Retired Standard	PSE	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	Recommended retirement date immediately after BCUC approval.	
NT.004.3.1 R2 RETIRE	N/A Retired	Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	FAC-014.1 Adopted 2011 Assessment Report 3 G.162-11	N/A - Retired Standard	N/A - Retired Standard	PSE	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	Recommended retirement date immediately after BCUC approval.	
NT.004.3.1 R3 RETIRE	N/A Retired	Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	FAC-014.1 Adopted 2011 Assessment Report 3 G.162-11	N/A - Retired Standard	N/A - Retired Standard	BA	Recommen- d for Retirement: Order No. 873 issued Sept 17, 2020	Recommend for Retirement	No impact to FortiBC.	No additional costs	No additional costs	N/A	

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FortisBC Inc. (DP, GO, GOP, RP, TO, TQP, TP, TSP)										Estimated Incremental/Net Costs Associated with Revision/Standard/Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)			BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Stability Impact (Press Alt-Enter to insert a carriage return in a cell)	One Time (\$)	Ongoing (\$)	BCUC Implementation Time	
NT-006.5 R1	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006-4 Adopted 2015 Assessment Report 8 R.38-15	1. No changes to the requirement from previous version	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	NT-006-4 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	FortisBC is not registered for this function.	N/A	N/A	N/A	
NT-006.5 R2	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006-4 Adopted 2015 Assessment Report 8 R.38-15	1. No changes to the requirement from previous version	N/A	BA, TSP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	NT-006-4 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	No impact to FortisBC.	No additional costs	No additional costs	Recommended effective date immediately after BCUC approval.	
NT-006.5 R3	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006-4 Adopted 2015 Assessment Report 8 R.38-15	1. Remove Part 1.1. If a Balancing Authority deems a Reliability Adjustment Arranged Interchange, the Balancing Authority must communicate that fact to its Reliability Coordinator no more than 10 minutes after the deems.	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	NT-006-4 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	FortisBC is not registered for this function.	N/A	N/A	N/A	
NT-006.5 R4 Revised	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006-4 Adopted 2015 Assessment Report 8 R.38-15	1. Remove subsection 4 in its entirety. This subsection is now considered "Reserved"	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	NT-006-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	FortisBC is not registered for this function.	N/A	N/A	N/A	
NT-006.5 R6 Revised	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	NT-006-4 Adopted 2015 Assessment Report 8 R.38-15	1. Remove subsection 4 in its entirety. This subsection is now considered "Reserved"	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	NT-006-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	FortisBC is not registered for this function.	N/A	N/A	N/A	
NT-009.2.1 R2	NT-009.2.1 R2SAW	Title: Implementation of Interchange To ensure that Balancing Authorities implement the Interchange as agreed upon in the Interchange confirmation process.	NT-009-1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	BA	30 Oct 2009	Recommendation for Retirement per Docket No. R030-4-000	FortisBC is not registered for this function.	N/A	N/A	N/A	
NT-009.3 R1	RSAW N/A	Title: Implementation of Interchange To ensure that Balancing Authorities implement the Interchange as agreed upon in the Interchange confirmation process.	NT-009-2.1 Adopted 2015 Assessment Report 8 R.38-15	1. Remove reference to INT-002	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	NT-009-3 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	FortisBC is not registered for this function.	N/A	N/A	N/A	
NT-009.3 R3	RSAW N/A	Title: Implementation of Interchange To ensure that Balancing Authorities implement the Interchange as agreed upon in the Interchange confirmation process.	NT-009-2.1 Adopted 2015 Assessment Report 8 R.38-15	1. No changes to the requirement from previous version	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	NT-009-3 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	FortisBC is not registered for this function.	N/A	N/A	N/A	
NT-010.2.1 R1	NT-010.2.1 R2SAW	Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or Implemented Interchange to address reliability.	NT-010-1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	BA	Recommendation 4 for Retirement RM19-16-000 & RM19-17-000	Order No. 873 issued Sept 17, 2020	FortisBC is not registered for this function.	N/A	N/A	N/A	
NT-010.2.1 R2	NT-010.2.1 R2SAW	Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or Implemented Interchange to address reliability.	NT-010-1 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	BA	Recommendation 4 for Retirement RM19-16-000 & RM19-17-000	Recommendation for Retirement Order No. 873 issued Sept 17, 2020	FortisBC is not registered for this function.	N/A	N/A	N/A	

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FortisBC Inc. (DP, GO, QOP, RP, TO, TDP, TP, TSP)											Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$)		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	One Time (\$)	Ongoing (\$)	(Press Alt-Enter to insert a carriage return in a cell)	
NT-010.2.1.R3	NT-010.2.1.RSAW	Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or implemented interchange to address reliability.	NT-010.1 Adopted 2008 Assessment Report 1 6:67:09	N/A - Retired Standard	N/A - Retired Standard	BA	Recommends 4 for Retirement SMTS 16, 000 & RM19 17,000	Recommendation for Retirement Order No. 873 issued Sept 17, 2020	FortisBC is not registered for this function.	N/A	N/A	N/A	
RC-002.6.R1	RC-002.6.RSAW	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions. Regional Variance Purpose: To develop a methodology that creates models for performing Operational Planning Analyses and Real-time Assessments.	RO-002.5 Adopted 2018 Assessment Report 11 8:33:18	N/A - Retired Standard	N/A - Retired Standard	RC	30 Oct 20	Recommendation for Retirement per Docket No. RD30-4-000	FortisBC is not registered for this function.	N/A	N/A	N/A	
RC-002.7.D.A.7	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-002.5 Adopted 2018 Assessment Report 11 8:33:18	7 - New Regional Variance included requires RC to develop in coordination with other BCUC common methodology to model and monitor Events necessary for operational assessments. D.A.7, D.A.7.1, D.A.7.2, and requirements specify the numerical order of the methodology.	N/A	RC	Docket No. SMTS 16, 000 & RM19 17,000 Effective Dec 14, 2020	RC-002.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	FortisBC is not registered for this function.	N/A	N/A	N/A	
RC-002.7.D.A.4	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-002.5 Adopted 2018 Assessment Report 11 8:33:18	7 - New Regional Variance included requires RC to use the methodology developed in D.A.7.	N/A	RC	Docket No. SMTS 16, 000 & RM19 17,000 Effective Dec 14, 2020	RC-002.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	FortisBC is not registered for this function.	N/A	N/A	N/A	
RC-002.7.R1 Reserve	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-002.5 Adopted 2018 Assessment Report 11 8:33:18	7 - Reserve requirement is in the entirety. The requirement is now reserved	N/A	RC	Docket No. SMTS 16, 000 & RM19 17,000 Effective Dec 14, 2020	RC-002.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	FortisBC is not registered for this function.	N/A	N/A	N/A	
RC-002.7.R2	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-002.5 Adopted 2018 Assessment Report 11 8:33:18	7 - No changes to the requirement from the previous version	N/A	RC	Docket No. SMTS 16, 000 & RM19 17,000 Effective Dec 14, 2020	RC-002.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	FortisBC is not registered for this function.	N/A	N/A	N/A	
RC-002.7.R3	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-002.5 Adopted 2018 Assessment Report 11 8:33:18	7 - No changes to the requirement from the previous version	N/A	RC	Docket No. SMTS 16, 000 & RM19 17,000 Effective Dec 14, 2020	RC-002.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	FortisBC is not registered for this function.	N/A	N/A	N/A	
RC-002.7.R4	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-002.5 Adopted 2018 Assessment Report 11 8:33:18	7 - No changes to the requirement from the previous version	N/A	RC	Docket No. SMTS 16, 000 & RM19 17,000 Effective Dec 14, 2020	RC-002.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	FortisBC is not registered for this function.	N/A	N/A	N/A	
RC-002.7.R5	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-002.5 Adopted 2018 Assessment Report 11 8:33:18	7 - No changes to the requirement from the previous version	N/A	RC	Docket No. SMTS 16, 000 & RM19 17,000 Effective Dec 14, 2020	RC-002.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	FortisBC is not registered for this function.	N/A	N/A	N/A	
RC-002.7.R6	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	RO-002.5 Adopted 2018 Assessment Report 11 8:33:18	7 - No changes to the requirement from the previous version	N/A	RC	Docket No. SMTS 16, 000 & RM19 17,000 Effective Dec 14, 2020	RC-002.7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	FortisBC is not registered for this function.	N/A	N/A	N/A	

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FortisBC Inc. (DP, GO, GOP, RP, TO, TOP, TP, TSP)												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)	
RCU-010-3 R1	RSAW N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	RO-010-2 Adopted 2017 Assessment Report 10 R.39-17	1. No changes to the requirement from previous version	N/A	RC	30-Oct-20	RCU-010-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-005-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	FortisBC is not registered for this function.	N/A	N/A	N/A
RCU-010-3 R2	RSAW N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	RO-010-2 Adopted 2017 Assessment Report 10 R.39-17	1. No changes to the requirement from previous version	N/A	RC	30-Oct-20	RCU-010-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-005-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	FortisBC is not registered for this function.	N/A	N/A	N/A
RCU-010-3 R3	RSAW N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	RO-010-2 Adopted 2017 Assessment Report 10 R.39-17	1. Remove applicability Load Serving Entity	N/A	BA, DP, GO, GOP, TO, TOP	30-Oct-20	RCU-010-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-005-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	Minimal changes to FortisBC documentation.	No additional costs.	No additional costs.	Recommended effective date immediately after BCUC approval.
MOD-020-0 R1	MOD-020-0 R1SAW	Title: Providing Interruption Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators To ensure that assessments and validation of past events and databases can be performed, reporting of actual demand data is needed. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcement for continued reliability. In addition to assist in proper real-time operating, load information related to controllable Demand-Side Management programs is needed.	MOD-020-0 Adopted 2008 Assessment Report 1 G.67-09	N/A - Retired Standard	N/A - Retired Standard	LSE, RP, TP	Recommendation for Retirement Order No. 879 issued Sept 17, 2020 2013-16-000 & RM19-17-001	Recommendation for Retirement Recommendation for Retirement Order No. 879 issued Sept 17, 2020	Minimal changes to FortisBC documentation.	No additional costs.	No additional costs.	Recommended retirement date immediately after BCUC approval.
MOD-031-3 R1	RSAW N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MOD-031-3 Adopted 2017 Assessment Report 10 R.39-17	1. Remove applicability Load Serving Entity	N/A	BA, PC	30-Oct-20	MOD-031-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-005-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Form: BC Inc. (DP, GO, GOP, RP, TO, TOP, TP, TSP)												
FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)	
MDO-031-3 B2	RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MDO-031-2 Adopted 2017 Assessment Report 10 R.39-17	3 - No changes to the requirement from previous version	N/A	BA, TP, RP, DP, PC	30-Oct-20	MDO-031-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MDO-031-3, MDO-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
MDO-031-3 B3	RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MDO-031-2 Adopted 2017 Assessment Report 10 R.39-17	3 - No changes to the requirement from previous version	N/A	BA, PC	30-Oct-20	MDO-031-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MDO-031-3, MDO-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
MDO-031-3 B4	RS&W N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MDO-031-2 Adopted 2017 Assessment Report 10 R.39-17	3 - No changes to the requirement from previous version	N/A	BA, TP, RP, DP, PC	30-Oct-20	MDO-031-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MDO-031-3, MDO-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
MDO-033-2 B1	RS&W N/A	Title: Steady-State and Dynamic System Model Validation To establish consistent validation requirements to facilitate the collection of accurate data and building of planning models to analyze the reliability of the interconnected transmission system.	MDO-033-1 Adopted 2015 Assessment Report 8 R.38-15	3 - No changes to the requirement from previous version	N/A	PC	30-Oct-20	MDO-033-2 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MDO-031-3, MDO-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Form BC Inc. (DP, GO, OOP, RP, TO, TOP, TP, TSP)												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Rule Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Availability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/Standard/Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)	
MDO-033-2 R2	RSAW N/A	Title: Steady-State and Dynamic System Model Validation To establish consistent validation requirements to facilitate the collection of accurate data and building of planning models to analyze the reliability of the interconnected transmission system.	MDO-033-1 Adopted 2015 Assessment Report 8 R.38-15	2. No changes to the requirement from previous version	N/A	RC, TOP	30 Oct 2020	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date: MDO-033-2 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MDO-001-3, MDO-033-2, MUC-001-4, PRC-004-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
MUC-001-4 ALL Requirements	RSAW N/A	Title: Nuclear Plant Interface Coordination This standard requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.	N/A	N/A	N/A	TO, TOP, TP, TSP, IA, RC, DP, GO, OOP, PC	30 Oct 2020	N/A	No impact to FortBC.	No additional costs	No additional costs	Recommended effective date immediately after BCUC approval.
PRC-004-6 R1	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(1) Adopted 2016 Assessment Report 9 R.32-16	3. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM15-16-000 & RM16-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4
PRC-004-6 R2	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(1) Adopted 2016 Assessment Report 9 R.32-16	3. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM15-16-000 & RM16-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4
PRC-004-6 R3	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(1) Adopted 2016 Assessment Report 9 R.32-16	3. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM15-16-000 & RM16-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4
PRC-004-6 R4 Revised	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(1) Adopted 2016 Assessment Report 9 R.32-16	3. Revised requirement in public entity. The requirement is now consistent.	N/A	DP, GO, TO	Docket No. RM15-16-000 & RM16-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	Minimal changes to FortBC documentation.	No additional costs	No additional costs	Recommended effective date immediately after BCUC approval.
PRC-004-6 R5	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(1) Adopted 2016 Assessment Report 9 R.32-16	3. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM15-16-000 & RM16-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4
PRC-004-6 R6	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(1) Adopted 2016 Assessment Report 9 R.32-16	3. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM15-16-000 & RM16-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4	See PRC-004-6 R4

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
PRC-006-4 D A 3	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 6-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 D A 4	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 6-33-18	1. Update reference to PRC-006-4	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 D B 1	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 6-33-18	1. No changes to the requirement from previous version	N/A	DP, DPLF, PC, TO	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 D B 11	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 6-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
PRC-006-4 D B 12	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 D B 2	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	N/A	PA, PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 D B 3	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 D B 4	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
PRC-006-4 R1	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R10	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous version	N/A	TO	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R11	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous version	N/A	PA, PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R12	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
PRC-006-4 R13	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R14	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R15	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R2	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
PRC-006-4 R3	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. Update reference to PRC-006-4	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R4	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	1. Update reference to PRC-006-4	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R5	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R6	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FortBC Inc. (DP, GO, OOP, RP, TO, TOP, TP, TSP)												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)	
PRC-006-4 R7	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 6-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R8	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 6-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-006-4 R9	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 6-33-18	1. No changes to the requirement from previous version	N/A	PC	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-024-3 D A 2	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024-2 Adopted 2016 Assessment Report 9 6-32-16	1. New Regional Variance included requires GO and TO to set its applicable voltage protection in accordance with PRC-024-3 Attachment 2a such that the applicable protection does not cause the generating resource to trip or cause tripping current during a voltage excursion within the "no trip zone" at the high of the BES or IRTS.	N/A	GO		Comments on the collection of information are due September 29, 2020. PRC-024-3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2020	Variance applicable to the Quebec Interconnection only.	No additional costs	No additional costs	Recommended effective date immediately after BCUC approval.
PRC-024-3 R1	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024-2 Adopted 2016 Assessment Report 9 6-32-16	1. Each Generator Owner shall set its applicable frequency protection in accordance with PRC-024-3 Attachment 1 such that the applicable protection does not cause the generating resource to trip or cause tripping current during a frequency excursion within the "no trip zone" during a frequency excursion with the following exceptions: 1. Applicable frequency protection may be set to trip or cause tripping current within a portion of the "no trip zone" for documented and commensurate regulatory or equipment limitations in accordance with Requirement 2c.	N/A	GO		Comments on the collection of information are due September 29, 2020. PRC-024-3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2020	Minimal changes to FortBC documentation.	No additional costs	No additional costs	Recommended effective date immediately after BCUC approval.
PRC-024-3 R2	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024-2 Adopted 2016 Assessment Report 9 6-32-16	1. Each Generator Owner shall set its applicable voltage protection in accordance with PRC-024-3 Attachment 2 such that the applicable protection does not cause the generating resource to trip or cause tripping current during a voltage excursion at the high side of the BES or IRTS subject to the following exceptions: 1. If the Transmission Planner allows less stringent voltage protection settings than those required to meet PRC-024-3 Attachment 2, then the generating resource may set its protection within the voltage recovery characteristics of a location-specific Transmission Characteristic Study. 2. Applicable voltage protection may be set to trip or cause tripping current during a voltage excursion within a portion of the "no trip zone" for documented and commensurate regulatory or equipment limitations in accordance with Requirement 2c.	N/A	GO		Comments on the collection of information are due September 29, 2020. PRC-024-3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2020	See PRC-024-3 R1	See PRC-024-3 R1	See PRC-024-3 R1	See PRC-024-3 R1

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Form BC Inc. (DP, GO, GOP, RP, TO, TOP, TP, TSP)											
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Rule Standards/Requirements	Effective Date of FERC Rule Approving Authority	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)
PRC-024.3 R1	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024.2 Adopted 2015 Assessment Report 9 8-31-16	1. Each generating owner shall document each known regulatory or equipment limitation that prevents an applicable generating resource(s) from remaining connected during defined frequency and voltage excursions in support of the BES, including the last time the limitation occurred, the associated generating resource(s) name(s), and any future fix plan. 2. The generating owner shall communicate the documented regulatory or equipment limitation on the approval of a previously documented regulatory or equipment limitation to the Planning Coordinator and Transmission Planner within the respective area of law of the authority. 3. Identification of a regulatory or equipment limitation. 4. Effect of the limitation on the BES. 5. Development of the equipment or equipment limitation that removes the limitation. 6. Condition or adjustment of an equipment limitation caused by cooperation of the applicable system the firm frequency excursion allowance.	N/A	GO, PC	Comments on the collection of information are due September 29, 2020.	PRC-024.3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2022	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
PRC-024.3 R1	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024.2 Adopted 2015 Assessment Report 9 8-31-16	1. Each generating owner shall provide an applicable protection settings associated with Paragraph 1.1 and 1.2 in the Planning Coordinator or Transmission Planner that includes the associated generating resource(s) name(s) and any future fix plan or other plan to address the issue and ensure the protection settings are updated to those previously approved actions directed by the Planning Coordinator or Transmission Planner that the reporting of the protection settings changes in the equipment.	N/A	GO, PC	Comments on the collection of information are due September 29, 2020.	PRC-024.3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2022	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TOP-001.5 R1	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Docket No. RM15-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001.5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RPO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19
TOP-001.5 R10	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Docket No. RM15-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001.5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RPO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19
TOP-001.5 R11	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	BA	Docket No. RM15-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001.5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RPO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	ForthBC is not registered for this function.	N/A	N/A
TOP-001.5 R12	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Docket No. RM15-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001.5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RPO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19
TOP-001.5 R13	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Docket No. RM15-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001.5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RPO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19
TOP-001.5 R14	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-31-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Docket No. RM15-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001.5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, RPO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FormBC Inc. (DP, GO, GOP, RP, TO, TOP, TP, TSP)										Estimated Incremental/ New Costs Associated with Revision/ New Standard/ Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
FERC Approved New/ Revised/ Retired Standard/ Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/ Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/ Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/ Stability Impact (Press Alt-Enter to insert a carriage return in a cell)	One Time (\$)	Ongoing (\$)	BCUC Implementation Time
TOP-001.5 R15	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	TOP-001.4 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001.4 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19
TOP-001.5 R16	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19
TOP-001.5 R17	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	FortisBC is not registered for this function.	N/A	N/A	N/A
TOP-001.5 R18	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19
TOP-001.5 R19 Reserved	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-33-18	1. Remove requirement 4 in its entirety. This requirement is now considered "dead" code.	TOP-001.5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	Minimal changes to FortisBC documentation.	No additional costs	No additional costs	Recommended effective date immediately after BCUC approval.
TOP-001.5 R20	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	FortisBC is not registered for this function.	N/A	N/A	N/A
TOP-001.5 R200	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	TOP-001.5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19
TOP-001.5 R21	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001.4 Adopted 2018 Assessment Report 11 8-33-18	1. No changes to the requirement from previous version	TOP-001.4 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19	See TOP-001.5 R19

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FortisBC Inc. (DP, GO, GOP, RP, TO, TOP, TP, TSP)													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Stability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any (\$) <table border="1"> <tr> <th>One Time (\$)</th> <th>Ongoing (\$)</th> </tr> </table>	One Time (\$)	Ongoing (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
One Time (\$)	Ongoing (\$)												
TOP-001-5 R22 Revised	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	No changes to the requirement from previous version	TOP-001-4 Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2019	TOP-001-4 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	FortisBC is not registered for this function.	N/A	N/A	N/A	
TOP-001-5 R23	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	No changes to the requirement from previous version	TOP-001-5 Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2019	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	FortisBC is not registered for this function.	N/A	N/A	N/A	
TOP-001-5 R24	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	No changes to the requirement from previous version	TOP-001-4 Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2019	TOP-001-4 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	FortisBC is not registered for this function.	N/A	N/A	N/A	
TOP-001-5 R1	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	No changes to the requirement from previous version	TOP-001-5 Mapping Document	BA, DP, GOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2019	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	
TOP-001-5 R4	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	No changes to the requirement from previous version	TOP-001-5 Mapping Document	BA, DP, GOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2019	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	
TOP-001-5 R5	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	No changes to the requirement from previous version	TOP-001-5 Mapping Document	DP, GOP, TOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2019	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	
TOP-001-5 R6	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	No changes to the requirement from previous version	TOP-001-5 Mapping Document	DP, GOP, TOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2019	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	
TOP-001-5 R7	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	No changes to the requirement from previous version	TOP-001-5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2019	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, PRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

FortsBC Inc. (DP, GO, GOP, RP, TO, TOP, TP, TSP)												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Capability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)	
TOP-001-5 R9	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 6-33-18	1. No changes to the requirement from previous version	TOP-001-5 Mapping Document	TOP	Docket No. RM18-16-000 & RM19-17-000 Effective Dec 14, 2020	Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19
TOP-001-5 R9	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 6-33-18	1. No changes to the requirement from previous version	TOP-001-5 Mapping Document	BA, TOP	Docket No. RM18-16-000 & RM19-17-000 Effective Dec 14, 2020	Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19	See TOP-001-5 R19
TOP-003-4 R1	RSAW N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003-3 Adopted 2017 Assessment Report 10 6-29-17	1. No changes to the requirement from previous version	N/A	TOP	30-Oct-20	Reliability Standards FAC-002-3, IRO-010-3, MOD-001-3, MOD-003-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See TOP-003-4 R5	See TOP-003-4 R5	See TOP-003-4 R5	See TOP-003-4 R5
TOP-003-4 R2	RSAW N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003-3 Adopted 2017 Assessment Report 10 6-29-17	1. No changes to the requirement from previous version	N/A	BA	30-Oct-20	Reliability Standards FAC-002-3, IRO-010-3, MOD-001-3, MOD-003-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	FortsBC is not registered for this function.	N/A	N/A	N/A
TOP-003-4 R3	RSAW N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003-3 Adopted 2017 Assessment Report 10 6-29-17	1. No changes to the requirement from previous version	N/A	TOP	30-Oct-20	Reliability Standards FAC-002-3, IRO-010-3, MOD-001-3, MOD-003-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	See TOP-003-4 R5	See TOP-003-4 R5	See TOP-003-4 R5	See TOP-003-4 R5

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Form BC Inc. (DP, GO, GOP, RP, TO, TDP, TP, TSP)												
FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Quality Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement, if any (\$)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)	
TPL-001-5.1.R8	RS&W NA	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TR-001.4 Adopted 2015 Assessment Report 8 R.38-15	1. No changes to the requirement from the previous version	TPL-001.5 Mapping Document	TP	#####	TPL-001.5 Implementation Plan (N/OTC) (N/OTC) (TPL-001-5.1)	US Enforcement Date of Standard: July 1, 2003	See TPL-001-5.1 R2	See TPL-001-5.1 R2	See TPL-001-5.1 R2
TPL-007.4 D.A.11.3	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. New regional variances	N/A	TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 D.A.11.4	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. New regional variances	N/A	TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 D.A.11.5	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. New regional variances	N/A	TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 D.A.7.1	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. Requirement D.A.7.1. Includes a footnote, subject to revision by the responsible entity in Part D.A.7.4, for implementing the selected articles from Part 4.	N/A	TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 D.A.7.4	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. New regional variances	N/A	TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 D.A.7.6	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. New regional variances	N/A	TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 R1	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. No changes to the requirement from previous version.	N/A	TP, PA, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 R10	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 R11	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. New Revision(s).	N/A	TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 R12	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. No changes to the requirement from previous version.	N/A	TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 R13	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. No changes to the requirement from previous version.	N/A	TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 R2	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, TP, PA, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 R3	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 R4	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, TP, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007.4 R5	TPL-007.4 RS&W	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2020 Assessment Report 13 R.19-20	1. No changes to the requirement from previous version.	N/A	GO, TO, TP, PA, PC	TPL-007.4 Comments on the collection of information are due August 6, 2020.	TPL-007.4 Implementation Plan	Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Form: BC Inc. (DP, GO, GOP, RP, TO, TDP, TP, TSP)												
FERC Approved New/Revised/Retired Standard/Requirement	RS&W Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Cybersecurity Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any (\$) (Press Alt-Enter to insert a carriage return in a cell)	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)	
TPL-007-4 R6	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007-3 Adopted 2020 Assessment Report 13 R-19-20	8. No changes to the requirement from previous version.	N/A	GO, TO, PC	TPL-007-4 Comments on this collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007-4 R7	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007-3 Adopted 2020 Assessment Report 13 R-19-20	1. Change to Part 7.1 include a timetable, subject to approval for any extension, to be submitted to the Compliance Enforcement Authority (CEA) with a request for extension of time if the responsible entity is unable to implement the CAP within the timetable provided in Part 7.3. The submitted CAP shall document the following: Part 7.4.1 Circumstances causing the delay for fully or partially implementing the required actions in Part 7.1 and how those circumstances are beyond the control of the responsible entity. Part 7.4.2 Specific developments 7.4.2 in its entirety. Part 7.4.3 A dated request for 7.4.3 Part 7.5.1 If a component of the CAP provides documented comments on the CAP, the responsible entity shall provide a documented response to that comment within 90 calendar days of receipt of those comments.	N/A	GO, TO, TP, PC	TPL-007-4 Comments on this collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007-4 R8	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007-3 Adopted 2020 Assessment Report 13 R-19-20	1. Delete requirement 8.3	N/A	TP, PC	TPL-007-4 Comments on this collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.
TPL-007-4 R9	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007-3 Adopted 2020 Assessment Report 13 R-19-20	8. No changes to the requirement from previous version.	N/A	TP, PA, PC	TPL-007-4 Comments on this collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.	See PC Feedback Spreadsheet for comments.

FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Standard	Current BCUC Superseded or to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement, if any (\$)			BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
												One Time (\$)	Ongoing (\$)	Cost Comments	
(Hyperlinks to the Standard)	(Hyperlinks to the available RSAWs)					(Hyperlinks to the mapping documents if available)		(Hyperlinks to the referenced FERC Orders)	(Hyperlinks to the FERC Approval Ruling)	(Hyperlinks to the respective implementation plan and effective dates if applicable)	(Press Alt-Enter to insert a carriage return in a cell) Analysis with BC Hydro registered as the PC for the entire province is shown in green. Analysis with FortisBC registering as the PC for the FortisBC Bulk Electric System (BES) footprint is shown in red. Analysis that is not dependent on BC Hydro or FortisBC PC registration is shown in black.				
FAC-002-3 R1	RSAW N/A	Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 FAC-002-3 is being assessed in Assessment 14	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	3. No changes to the requirement from previous version.	N/A	PA/PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-2020	FAC-002-3 Implementation Plan Implementation Time: Effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard US Enforcement Date 01-Apr-2021	Coordination with BC Hydro as the PC would be required for new generation, transmission, or load facilities connected to the Bulk Electric System. The data submittal and study coordination is applicable to TP, TO, GO, and DP registered entities. BC Hydro has not provided a process or requirements for FortisBC coordination on new facilities. All requirements are applicable to both TP and PC, therefore, FortisBC is already required to be compliant with this standard as a TP. Minimal changes are required to current documentation and processes if FortisBC also registers as a PC.	Unknown No additional costs	Unknown No additional costs	FortisBC cannot estimate any costs without knowing the BC Hydro data submittal and study requirements. N/A	Recommended effective date is 24-36 months after BCUC approval. Recommended effective date immediately after BCUC approval.
FAC-002-3 R2	RSAW N/A	Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 FAC-002-3 is being assessed in Assessment 14	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	3. No changes to the requirement from previous version.	N/A	PA/PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-2020	FAC-002-3 Implementation Plan Implementation Time: Effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard US Enforcement Date 01-Apr-2021	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1
FAC-002-3 R3	RSAW N/A	Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 FAC-002-3 is being assessed in Assessment 14	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	3. Remove Applicability Load Serving Entity	N/A	PA/PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-2020	FAC-002-3 Implementation Plan Implementation Time: Effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard US Enforcement Date 01-Apr-2021	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1
FAC-002-3 R4	RSAW N/A	Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 FAC-002-3 is being assessed in Assessment 14	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	3. No changes to the requirement from previous version.	N/A	PA/PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-2020	FAC-002-3 Implementation Plan Implementation Time: Effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard US Enforcement Date 01-Apr-2021	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1
FAC-002-3 R5	RSAW N/A	Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 FAC-002-3 is being assessed in Assessment 14	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	3. No changes to the requirement from previous version.	N/A	PA/PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-2020	FAC-002-3 Implementation Plan Implementation Time: Effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard US Enforcement Date 01-Apr-2021	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1	See FAC-002-3 R1

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.

This document contains information, where it is not otherwise publicly available, that is confidential to BC Hydro. It is not to be disseminated outside BC Hydro.

FERC Approval New/Revised/Retired Standard/Requirement	RSM Line	Standard Name and Description	Current SCQC Adopted Standards to be Superseded	FERC Approval Revision	FERC Approval Revision Mapping Document	Functional Applicability of FERC Approval Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approval Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Usability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Cost One Time (\$)	Costs Associated with Cost Ongoing (\$)	SCQC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
FERC-001-14	RSM-144	Cyber Security – Communications between Control Centers To protect the confidentiality and integrity of Real-time Assessment and Real-time monitoring data transmitted between Control Centers.	New Standard	New Standard - Pacific NA	NA	NA, US, ODP, HIC T0, TDP	Order No. 6838-CA-14 Dated July 2, 2014	7/2/2014	Subsequent Date Reliability Standard CIP-002-1 - Cyber Security – Communications between Control Centers Where approved by an applicable governmental authority to request, Reliability Standard CIP-002-1 shall become effective on the first day of the first calendar quarter that is twenty-four (24) calendar months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Effective Date: July 3, 2012	Change within the real-time or operations a Control Center	\$	\$	na

Disclaimer: This information has been prepared as input into BC Hydro's benchmark assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Title: Mandatory Reliability Standards, 2016/17 Clean Linker Partnership, 2016/17 Clean Linker Partnership										Estimated Incremental/Net Costs Associated with Revision/Non-Standard Requirement		BCSC Implementation Time (Where All-Enter to insert a carriage return in a cell)								
FERC Approved New/Revised/Repealed Standard/Requirement	RS&W Link	Discussion Notes and Description	Current BCSC Adopted Standard to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standard/Revisions	FERC Order No. Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Standards Impact (Where All-Enter to insert a carriage return in a cell)	One Time (\$)	Ongoing (\$)	0	1	2	3	4	5		
RA-002-01	RA-002-01	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is returned to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	RA-002-01 Adopted 2015 Assessment Report 9:32:35	4. No changes to the requirement from the previous version.	N/A	BA, FRSG	Order No. 10004-004, issued July 15, 2002	12-31-02	RA-002-01 Implementation Plan	Where approved by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. (U.S. Enforcement Date of Standard: Dec 1, 2002)	0	0	0	0	0	0	0	0	NA	
RA-002-02	RA-002-02	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is returned to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	RA-002-02 Adopted 2015 Assessment Report 9:32:35	4. No changes to the requirement from the previous version.	N/A	BA	Order No. 10004-004, issued July 15, 2002	12-31-02	RA-002-02 Implementation Plan	Where approved by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. (U.S. Enforcement Date of Standard: Dec 1, 2002)	0	0	0	0	0	0	0	0	0	NA
RA-002-03	RA-002-03	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is returned to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	RA-002-03 Adopted 2015 Assessment Report 9:32:35	4. No changes to the requirement from the previous version.	N/A	BA	Order No. 10004-004, issued July 15, 2002	12-31-02	RA-002-03 Implementation Plan	Where approved by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. (U.S. Enforcement Date of Standard: Dec 1, 2002)	0	0	0	0	0	0	0	0	0	NA
RA-002-04	RA-002-04	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is returned to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	RA-002-04 Adopted 2015 Assessment Report 9:32:35	4. No changes to the requirement from the previous version.	N/A	BA	Order No. 10004-004, issued July 15, 2002	12-31-02	RA-002-04 Implementation Plan	Where approved by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. (U.S. Enforcement Date of Standard: Dec 1, 2002)	0	0	0	0	0	0	0	0	0	NA
FA-003-01	RS&W NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FA-003-01 Adopted 2015 Assessment Report 8:38:35	4. No changes to the requirement from previous version.	N/A	TP, FC	Order No. 10004-004, issued July 15, 2002	03-01-02	FA-003-01 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the Planning Coordinator (PC) role (not yet defined in BC). FC costs go under ANPIC, other entities cost stay on this spreadsheet (ANPIC). Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. (U.S. Enforcement Date of Standard: Aug 3, 2001)	0	0	0	0	0	0	0	0	0	NA
FA-003-02	RS&W NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FA-003-02 Adopted 2015 Assessment Report 8:38:35	4. No changes to the requirement from previous version.	N/A	GO, TP, FC	Order No. 10004-004, issued July 15, 2002	03-01-02	FA-003-02 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the Planning Coordinator (PC) role (not yet defined in BC). FC costs go under ANPIC, other entities cost stay on this spreadsheet (ANPIC). No significant changes to GO-relevant requirements.	0	0	0	0	0	0	0	0	0	Immediately after adoption by the BCSC.
FA-003-03	RS&W NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FA-003-03 Adopted 2015 Assessment Report 8:38:35	4. Review Availability Load Service Study.	N/A	OP, TP, FC	Order No. 10004-004, issued July 15, 2002	03-01-02	FA-003-03 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the Planning Coordinator (PC) role (not yet defined in BC). FC costs go under ANPIC, other entities cost stay on this spreadsheet (ANPIC). Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. (U.S. Enforcement Date of Standard: Aug 3, 2001)	0	0	0	0	0	0	0	0	0	NA
FA-003-04	RS&W NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FA-003-04 Adopted 2015 Assessment Report 8:38:35	4. No changes to the requirement from previous version.	N/A	TO, TP, FC	Order No. 10004-004, issued July 15, 2002	03-01-02	FA-003-04 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the Planning Coordinator (PC) role (not yet defined in BC). FC costs go under ANPIC, other entities cost stay on this spreadsheet (ANPIC). Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. (U.S. Enforcement Date of Standard: Aug 3, 2001)	0	0	0	0	0	0	0	0	0	NA
FA-003-05	RS&W NA	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FA-003-05 Adopted 2015 Assessment Report 8:38:35	4. No changes to the requirement from previous version.	N/A	GO, TP, FC	Order No. 10004-004, issued July 15, 2002	03-01-02	FA-003-05 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the PC role (not yet defined in BC). This requirement was held in abeyance because of FC function as all costs should go under ANPIC. Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. (U.S. Enforcement Date of Standard: Aug 3, 2001)	0	0	0	0	0	0	0	0	0	NA
FA-013-01 RE TIME	NA Revised	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology to, and perform an annual assessment to identify potential future Transmission System weaknesses and identify Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FA-013-01 Adopted 2008 Assessment Report 1:07:00	NA - Revised Standard	NA - Revised Standard	FC	Repealed by Order No. 10004-004, issued July 15, 2002	Repealed	Repealed by Order No. 10004-004, issued July 15, 2002	Not applicable as all entities are registered as GO and GOP.	0	0	0	0	0	0	0	0	NA	
FA-013-01 RE TIME	NA Revised	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology to, and perform an annual assessment to identify potential future Transmission System weaknesses and identify Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FA-013-01 Adopted 2008 Assessment Report 1:07:00	NA - Revised Standard	NA - Revised Standard	FC	Repealed by Order No. 10004-004, issued July 15, 2002	Repealed	Repealed by Order No. 10004-004, issued July 15, 2002	Not applicable as all entities are registered as GO and GOP.	0	0	0	0	0	0	0	0	NA	
FA-013-01 RE TIME	NA Revised	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology to, and perform an annual assessment to identify potential future Transmission System weaknesses and identify Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FA-013-01 Adopted 2008 Assessment Report 1:07:00	NA - Revised Standard	NA - Revised Standard	FC	Repealed by Order No. 10004-004, issued July 15, 2002	Repealed	Repealed by Order No. 10004-004, issued July 15, 2002	Not applicable as all entities are registered as GO and GOP.	0	0	0	0	0	0	0	0	NA	
FA-013-01 RE TIME	NA Revised	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology to, and perform an annual assessment to identify potential future Transmission System weaknesses and identify Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FA-013-01 Adopted 2008 Assessment Report 1:07:00	NA - Revised Standard	NA - Revised Standard	FC	Repealed by Order No. 10004-004, issued July 15, 2002	Repealed	Repealed by Order No. 10004-004, issued July 15, 2002	Not applicable as all entities are registered as GO and GOP.	0	0	0	0	0	0	0	0	NA	

Disclaimer: This information has been prepared as input into BC Hydro's fourth-year assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Title: BC Hydro General Partnership, Shuswap Creek Limited Partnership, Daseen General Partnership, Upper Clewley River Power, Kootenay Hydro Limited Partnership (GDSOP)														
FERC Approved New/Revised/Retired Standard/Requirement	RSW Line	Standard Name and Description	Current BCCBC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Standard Comments Organizational Activities and Reliability/Standards Impact (Please Attach to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/New Standard/Requirement of	BCCBC Implementation Time (Please Attach to insert a carriage return in a cell)		
											One Time (\$)	Ongoing (\$)		
MOS-01-0-01	RSWA NA	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	MO-010-2 Approved 2017 Assessment Report 10 8-30-17	1. Remove availability Load Storage Study	NA	PC	Doctel No. RD004-001 , Issued Oct 10, 2002	2004-01-01	MOS-01-0-3 Implementation Plan	Reliability Standards FAC-003-3, IRD-010-3, MOD-031-3, MOD-032-3, NAG-001-4, PRC-004-4, and TOP-004-4 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	0	0	Not applicable as all entities are registered as GO and GOP.	NA
MOS-01-0-02	RSWA NA	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	MO-010-2 Approved 2017 Assessment Report 10 8-30-17	1. Remove availability Load Storage Study	NA	BA, DP, GP, GOP, TO, TOP	Doctel No. RD004-001 , Issued Oct 10, 2002	2004-01-01	MOS-01-0-3 Implementation Plan	Reliability Standards FAC-003-3, IRD-010-3, MOD-031-3, MOD-032-3, NAG-001-4, PRC-004-4, and TOP-004-4 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	0	0	No significant changes to GO-relevant requirements.	Immediately after adoption by the BCCBC.
MOS-004-0-01	MOS-004-0-01 RSWA	Title: Providing Interruption Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators To ensure that assessments and validation of past events and databases can be performed, reporting of actual demand data is needed. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcement for continued reliability. In addition to assist in proper real-time operating, load information related to continuous Demand-Side Management programs is needed.	MO-004-0 Approved 2008 Assessment Report 11 5-47-09	NA - Retired Standard	NA - Retired Standard	LSE, RP, TP	Doctel No. DM004-0-001 , Issued Mar 16, 2007	Retired	Retired	Not applicable as all entities are registered as GO and GOP.	0	0	NA	
MOS-004-0-02	MOS-004-0-02 RSWA	Title: Providing Interruption Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators To ensure that assessments and validation of past events and databases can be performed, reporting of actual demand data is needed. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcement for continued reliability. In addition to assist in proper real-time operating, load information related to continuous Demand-Side Management programs is needed.	MO-004-0 Approved 2008 Assessment Report 11 5-47-09	NA - Retired Standard	NA - Retired Standard	TSP	Doctel No. DM004-0-001 , Issued Mar 16, 2007	Retired	Retired	Not applicable as all entities are registered as GO and GOP.	0	0	NA	
MOS-011-0-01	RSWA NA	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of acquirers and respondents of that data.	MO-011-0 Approved 2017 Assessment Report 10 8-30-17	1. No changes to the requirement from previous version	NA	BA, PC	Doctel No. RD004-001 , Issued Oct 10, 2002	2004-01-01	MOS-011-3 Implementation Plan	Reliability Standards FAC-003-3, IRD-010-3, MOD-031-3, MOD-032-3, NAG-001-4, PRC-004-4, and TOP-004-4 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	0	0	Reliability Compliance Draft Note: The requirement ALSO applies to the Planning Coordinator (PC) role (not yet defined in BCI). PC costs go under AMRPC, other entities cost stay on this spreadsheet (AMRA). Not applicable as all entities are registered as GO and GOP.	NA
MOS-011-0-02	RSWA NA	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of acquirers and respondents of that data.	MO-011-0 Approved 2017 Assessment Report 10 8-30-17	1. No changes to the requirement from previous version	NA	BA, TP, RP, DP, PC	Doctel No. RD004-001 , Issued Oct 10, 2002	2004-01-01	MOS-011-3 Implementation Plan	Reliability Standards FAC-003-3, IRD-010-3, MOD-031-3, MOD-032-3, NAG-001-4, PRC-004-4, and TOP-004-4 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	0	0	Reliability Compliance Draft Note: The requirement ALSO applies to the Planning Coordinator (PC) role (not yet defined in BCI). PC costs go under AMRPC, other entities cost stay on this spreadsheet (AMRA). Not applicable as all entities are registered as GO and GOP.	NA
MOS-011-0-03	RSWA NA	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of acquirers and respondents of that data.	MO-011-0 Approved 2017 Assessment Report 10 8-30-17	1. No changes to the requirement from previous version	NA	BA, PC	Doctel No. RD004-001 , Issued Oct 10, 2002	2004-01-01	MOS-011-3 Implementation Plan	Reliability Standards FAC-003-3, IRD-010-3, MOD-031-3, MOD-032-3, NAG-001-4, PRC-004-4, and TOP-004-4 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	0	0	Reliability Compliance Draft Note: The requirement ALSO applies to the Planning Coordinator (PC) role (not yet defined in BCI). PC costs go under AMRPC, other entities cost stay on this spreadsheet (AMRA). Not applicable as all entities are registered as GO and GOP.	NA
MOS-011-0-04	RSWA NA	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of acquirers and respondents of that data.	MO-011-0 Approved 2017 Assessment Report 10 8-30-17	1. No changes to the requirement from previous version	NA	BA, TP, RP, DP, PC	Doctel No. RD004-001 , Issued Oct 10, 2002	2004-01-01	MOS-011-3 Implementation Plan	Reliability Standards FAC-003-3, IRD-010-3, MOD-031-3, MOD-032-3, NAG-001-4, PRC-004-4, and TOP-004-4 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	0	0	Reliability Compliance Draft Note: The requirement ALSO applies to the Planning Coordinator (PC) role (not yet defined in BCI). PC costs go under AMRPC, other entities cost stay on this spreadsheet (AMRA). Not applicable as all entities are registered as GO and GOP.	NA

Disclaimer: This information has been prepared as input into BC Hydro's fourth-year assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Title: 2024 Minimum General Partnership, 2024/25 Crest Limited Partnership, 2024/25 General Partnership, Upper Crested River Power, Kootenay Hydro Limited Partnership (GOSOP)												
FERC Approved New/Revised/Revised Standard/Requirement	RS&W Line	Description Name and Description	Current BCCRC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Revisions	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Revision Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Statutory Impact (Please Attach to insert a carriage return in a cell)	Estimated Incremental/Flow Costs Associated with Revision/Standard/Requirement	BCCRC Implementation Time (Please Attach to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
PC-008-4.0.0.11	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FERC-008-9 Adopted 2018 Assessment Report 11 6.30.18	4 - No changes to the requirement from previous version	NA	PC	Order No. 101004-0-001 Issued Oct 10, 2020	2020-04-28	PC-008-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-008-4, and TOP-004-4. Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	Reliability Compliance Dept. Note: The requirement ALSO applies to the PC role (not yet defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMRC. Not applicable as all entities are regulated as GO and GDP.		
PC-008-4.0.0.12	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FERC-008-9 Adopted 2018 Assessment Report 11 6.30.18	4 - No changes to the requirement from previous version	NA	PC	Order No. 101004-0-001 Issued Oct 10, 2020	2020-04-28	PC-008-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-008-4, and TOP-004-4. Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	Reliability Compliance Dept. Note: The requirement ALSO applies to the PC role (not yet defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMRC. Not applicable as all entities are regulated as GO and GDP.		
PC-008-4.0.0.13	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FERC-008-9 Adopted 2018 Assessment Report 11 6.30.18	4 - No changes to the requirement from previous version	NA	PA, PC	Order No. 101004-0-001 Issued Oct 10, 2020	2020-04-28	PC-008-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-008-4, and TOP-004-4. Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	Reliability Compliance Dept. Note: The requirement ALSO applies to the PC role (not yet defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMRC. Not applicable as all entities are regulated as GO and GDP.		
PC-008-4.0.0.14	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FERC-008-9 Adopted 2018 Assessment Report 11 6.30.18	4 - No changes to the requirement from previous version	NA	PC	Order No. 101004-0-001 Issued Oct 10, 2020	2020-04-28	PC-008-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-008-4, and TOP-004-4. Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	Reliability Compliance Dept. Note: The requirement ALSO applies to the PC role (not yet defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMRC. Not applicable as all entities are regulated as GO and GDP.		
PC-008-4.0.0.15	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FERC-008-9 Adopted 2018 Assessment Report 11 6.30.18	4 - No changes to the requirement from previous version	NA	PC	Order No. 101004-0-001 Issued Oct 10, 2020	2020-04-28	PC-008-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-008-4, and TOP-004-4. Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	Reliability Compliance Dept. Note: The requirement ALSO applies to the PC role (not yet defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMRC. Not applicable as all entities are regulated as GO and GDP.		
PC-008-4.0.0.16	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FERC-008-9 Adopted 2018 Assessment Report 11 6.30.18	4 - No changes to the requirement from previous version	NA	TO	Order No. 101004-0-001 Issued Oct 10, 2020	2020-04-28	PC-008-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-008-4, and TOP-004-4. Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	Reliability Compliance Dept. Note: The requirement ALSO applies to the PC role (not yet defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMRC. Not applicable as all entities are regulated as GO and GDP.		
PC-008-4.0.0.17	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FERC-008-9 Adopted 2018 Assessment Report 11 6.30.18	4 - No changes to the requirement from previous version	NA	PC	Order No. 101004-0-001 Issued Oct 10, 2020	2020-04-28	PC-008-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-008-4, and TOP-004-4. Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	Reliability Compliance Dept. Note: The requirement ALSO applies to the PC role (not yet defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMRC. Not applicable as all entities are regulated as GO and GDP.		
PC-008-4.0.0.18	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	FERC-008-9 Adopted 2018 Assessment Report 11 6.30.18	4 - No changes to the requirement from previous version	NA	PC	Order No. 101004-0-001 Issued Oct 10, 2020	2020-04-28	PC-008-4 Implementation Plan Reliability Standards FAC-003-3, IRO-010-3, MOD-031-3, MOD-032-2, NUC-001-4, PRC-008-4, and TOP-004-4. Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approved by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	Reliability Compliance Dept. Note: The requirement ALSO applies to the PC role (not yet defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMRC. Not applicable as all entities are regulated as GO and GDP.		

Disclaimer: This information has been prepared as input into BC Hydro's benchmark assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.

Total Minimum General Partnership, Shweta Creek Limited Partnership, Dase General Partnership, Upper Cooten River Power, Karaman Hydro Limited Partnership (GOSOP)												
FERC Approved New/Revised/Revised Standard/Requirement	RS&W Line	Standard Name and Description	Current BCCRC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Standard Comments Organizational Activities and Reliability/Usability Impact (Please Address to meet a carriage entry in a cell)	Estimated Incremental/Non-Costs Associated with Revision/How Standard/Requirement is	BCCRC Implementation Time (Please Address to meet a carriage entry in a cell)
											One Time (\$)	Ongoing (\$)
PC-024-01-01	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide fast resort system preservation measures.	FERC-005-1 FERC-005-2 Assessment Report 11 6-23-20	4. No changes to the requirement from previous version.	N/A	PC	Order No. 10004-0-0001 Issued: Oct 19, 2020	10/19/20	PC-024-1 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the PC role (not just defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMPC. Not applicable as all entities are registered as SO and GGP.		
PC-024-01-02	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide fast resort system preservation measures.	FERC-005-1 FERC-005-2 Assessment Report 11 6-23-20	4. No changes to the requirement from previous version.	N/A	PC	Order No. 10004-0-0001 Issued: Oct 19, 2020	10/19/20	PC-024-1 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the PC role (not just defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMPC. Not applicable as all entities are registered as SO and GGP.		
PC-024-01-03	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide fast resort system preservation measures.	FERC-005-1 FERC-005-2 Assessment Report 11 6-23-20	4. No changes to the requirement from previous version.	N/A	PC	Order No. 10004-0-0001 Issued: Oct 19, 2020	10/19/20	PC-024-1 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the PC role (not just defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMPC. Not applicable as all entities are registered as SO and GGP.		
PC-024-01-04	RS&W NA	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (AFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide fast resort system preservation measures.	FERC-005-1 FERC-005-2 Assessment Report 11 6-23-20	4. No changes to the requirement from previous version.	N/A	PC	Order No. 10004-0-0001 Issued: Oct 19, 2020	10/19/20	PC-024-1 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the PC role (not just defined in BC). This requirement was held in abeyance because of PC function as all costs should go on AMPC. Not applicable as all entities are registered as SO and GGP.		
PC-024-01-05	RS&W NA	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	FERC-024-2 Assessment Report 9 6-23-20	4. No changes to the requirement from previous version.	N/A	GO	Order No. 10007-0-0001 Issued: July 16, 2020 Public: July 16, 2020	Comments on the collection of information as due September 29, 2020.	PC-024-3 Implementation Plan	FERC-024-3 Implementation Plan		0
PC-024-01-06	RS&W NA	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	FERC-024-2 Assessment Report 9 6-23-20	4. No changes to the requirement from previous version.	N/A	GO	Order No. 10007-0-0001 Issued: July 16, 2020 Public: July 16, 2020	Comments on the collection of information as due September 29, 2020.	PC-024-3 Implementation Plan	FERC-024-3 Implementation Plan		0
PC-024-01-07	RS&W NA	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	FERC-024-2 Assessment Report 9 6-23-20	4. No changes to the requirement from previous version.	N/A	GO	Order No. 10007-0-0001 Issued: July 16, 2020 Public: July 16, 2020	Comments on the collection of information as due September 29, 2020.	PC-024-3 Implementation Plan	FERC-024-3 Implementation Plan		0
PC-024-01-08	RS&W NA	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	FERC-024-2 Assessment Report 9 6-23-20	4. No changes to the requirement from previous version.	N/A	GO	Order No. 10007-0-0001 Issued: July 16, 2020 Public: July 16, 2020	Comments on the collection of information as due September 29, 2020.	PC-024-3 Implementation Plan	FERC-024-3 Implementation Plan		0
PC-024-01-09	RS&W NA	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	FERC-024-2 Assessment Report 9 6-23-20	4. No changes to the requirement from previous version.	N/A	GO	Order No. 10007-0-0001 Issued: July 16, 2020 Public: July 16, 2020	Comments on the collection of information as due September 29, 2020.	PC-024-3 Implementation Plan	FERC-024-3 Implementation Plan		0
PC-024-01-10	RS&W NA	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resources) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	FERC-024-2 Assessment Report 9 6-23-20	4. No changes to the requirement from previous version.	N/A	GO	Order No. 10007-0-0001 Issued: July 16, 2020 Public: July 16, 2020	Comments on the collection of information as due September 29, 2020.	PC-024-3 Implementation Plan	FERC-024-3 Implementation Plan		0
PC-024-01-11	RS&W NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnected by ensuring present actions to prevent or mitigate such occurrences.	TOP-001-4 Assessment Report 11 6-23-20	4. No changes to the requirement from previous version.	TOP-001-5 (Missing Document)	TOP	Order No. 10004-0-0001 Issued: Oct 19, 2020 Public: Oct 19, 2020	US Enforcement Date of Standard: Apr 1, 2021	TOP-001-5 Implementation Plan	Reliability Compliance Dept. Note: This requirement ALSO applies to the Planning Coordinator (PC) role (not just defined in BC). PC costs go under AMPC, other entities cost stay on this spreadsheet (AMPC).		0

Disclaimer: This information has been prepared as input into BC Hydro's benchmark assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Total Member General Partnership, Shweta Creek Limited Partnership, Dase General Partnership, Upper Cleared River Power, Klamath Hydro Limited Partnership (GDSOP)															
FERC Approved New/Revised/Replaced Standard/Requirement	RSAW Line	Standard Name and Description	Current BCCG Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	State/actor Comments Organizational Activities and Reliability/Standards Impact (Please Attach to insert a carriage return in a cell)	Estimated Incremental/Net Costs Associated with Revision/How Standard/Requirement is	BCCG Implementation Time (Please Attach to insert a carriage return in a cell)			
TOP-001-6-011	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-011-2018 Adopted 2018 Assessment Report 11 6-33-18	1- No changes to the requirement from previous version	TOP-001-6-011-2020 Mandatory Document	TOP	Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-011-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	Not applicable as all entities are required as GO and GOP.	One Time (\$)	Ongoing (\$)	0	NA
TOP-001-6-012-01	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-012-2018 Adopted 2018 Assessment Report 11 6-33-18	1- Revised requirement to fit entity. The requirement is now completely removed.	TOP-001-6-012-2020 Mandatory Document		Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-012-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	Not applicable as all entities are required as GO and GOP.	0	0	0	NA
TOP-001-6-013	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-013-2018 Adopted 2018 Assessment Report 11 6-33-18	1- No changes to the requirement from previous version	TOP-001-6-013-2020 Mandatory Document	SA	Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-013-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	Not applicable as all entities are required as GO and GOP.	0	0	0	NA
TOP-001-6-014	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-014-2018 Adopted 2018 Assessment Report 11 6-33-18	1- No changes to the requirement from previous version	TOP-001-6-014-2020 Mandatory Document	SA	Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-014-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	Not applicable as all entities are required as GO and GOP.	0	0	0	NA
TOP-001-6-015	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-015-2018 Adopted 2018 Assessment Report 11 6-33-18	1- No changes to the requirement from previous version	TOP-001-6-015-2020 Mandatory Document	SA, GOP, GOP	Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-015-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	No significant changes to GO-relevant requirements.	0	0	0	Three (3) months after the effective date of BCCG's order approving the standard
TOP-001-6-016	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-016-2018 Adopted 2018 Assessment Report 11 6-33-18	1- No changes to the requirement from previous version	TOP-001-6-016-2020 Mandatory Document	SA, GOP, GOP	Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-016-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	No significant changes to GO-relevant requirements.	0	0	0	Three (3) months after the effective date of BCCG's order approving the standard
TOP-001-6-017	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-017-2018 Adopted 2018 Assessment Report 11 6-33-18	1- No changes to the requirement from previous version	TOP-001-6-017-2020 Mandatory Document	OP, GOP, TOP	Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-017-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	No significant changes to GO-relevant requirements.	0	0	0	Three (3) months after the effective date of BCCG's order approving the standard
TOP-001-6-018	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-018-2018 Adopted 2018 Assessment Report 11 6-33-18	1- No changes to the requirement from previous version	TOP-001-6-018-2020 Mandatory Document	TOP	Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-018-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	Not applicable as all entities are required as GO and GOP.	0	0	0	NA
TOP-001-6-019	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-019-2018 Adopted 2018 Assessment Report 11 6-33-18	1- No changes to the requirement from previous version	TOP-001-6-019-2020 Mandatory Document	TOP	Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-019-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	Not applicable as all entities are required as GO and GOP.	0	0	0	NA
TOP-001-6-020	RSAW NA	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-6-020-2018 Adopted 2018 Assessment Report 11 6-33-18	1- No changes to the requirement from previous version	TOP-001-6-020-2020 Mandatory Document	SA, TOP	Order No. DMR-16-000 & NAR-17-000 Issued Sept 17, 2020	Amended No. DMR-16-000 & NAR-17-000 Effective Dec 14, 2020	TOP-001-6-020-2020 Implementation Plan	Reliability Standards FAC-008.4, INT-008.5, INT-009-3, IRO-002.4, PRC-004.6, TOP-001-6, and VAR-001-6 Where approved by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021	Not applicable as all entities are required as GO and GOP.	0	0	0	NA

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

Table 14: Mandatory Reliability Standards, Shweta Creek Limited Partnership, Duke General Partnership, Upper Lillooet River Power, Harrison Hydro Limited Partnership (GDSOP)												
FERC Approved New/Revised/Retired Standard/Requirement	RS&M Link	Standard Name and Description	Current BCSC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	State/Utility Comments Organizational Activities and Reliability/Sustainability Impact (Please Attach to insert a carriage return in a cell)	Estimated Incremental/New Costs Associated with Revision/New Standard/Requirement of	BCSC Implementation Time (Please Attach to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
TR-007.4.01	TR-007.4.0100	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TR-007.3 Adopted 2010 Assessment Report 11 6-28-10		N/A	TP, PA, PC	Order No. 61063-3-001 , Issued March 18, 2010 , Published April 14, 2010	FERC's Enforcement on Implementation , Publication and Rule Approval	TR-007.4 Implementation Page	Reliability Compliance Dept. Note: This requirement applies to the PC rule (not yet defined in BCS). All entities need to go under ABRPC agreements. Not applicable as all entities are implemented as GO and GGP.		

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date said. It should not be relied upon for any other purpose.

<small>SELECT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY via TO: GO, CP, etc.</small>	<small>FERC Approved New/Revised/Retired Standard/Requirement</small>	<small>FERC Approved Revision</small>	<small>FERC Approved Revision Mapping Document</small>	<small>Functional Applicability of FERC Approved Standards/Requirements</small>	<small>FERC Order No., Order Date and Order Publication Date</small>	<small>Effective Date of FERC Rule Approving the Standard</small>	<small>FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date</small>	<small>Stakeholder Comments Organizational Activities and Reliability/Security Impact (Press Alt-Enter to insert a carriage return in a cell)</small>	<small>Estimated Incremental New Costs Associated with Cost One Time (\$)</small>	<small>Cost Ongoing (\$)</small>	<small>BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)</small>	
CP-012-1-01	REAR N/A	Cyber Security – Communications between Control Centers <small>Updated the confidentiality and integrity of Real-time Assessment and Real-time monitoring data transferred between Control Centers.</small>	New Standard	New Standard - Redline N/A	N/A	NA, GO, GOP, R/C, T/O, TOP	Order No. 8042-00-0000 Administrative Order	CP-012-1-01 Reliability Standard CP-012-1 - Cyber Security – Communications between Control Centers <small>Where approved by an applicable governmental authority is required, Reliability Standard CP-012-1 shall become effective on the first day of the first calendar quarter that is twelve (12) calendar months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.</small> Effective Date: July 1, 2022	Incremental change	\$100,000 to \$200,000	\$25,000 to \$50,000	One year after adoption by the BCUC

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)		
BAL-003-2 R1	BAL-003-2 RS	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-003-1.1 Adopted 2016 Assessment Report 9 R-32-16	2. No changes to the requirement from the previous version.	N/A	BA, FRSG	Docket No. RD20-9-000 Issued July 15, 2020	15-Jul-20	BAL-003-2 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec 1, 2020				
BAL-003-2 R2	BAL-003-2 RS	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-003-1.1 Adopted 2016 Assessment Report 9 R-32-16	2. No changes to the requirement from the previous version.	N/A	BA	Docket No. RD20-9-000 Issued July 15, 2020	15-Jul-20	BAL-003-2 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec 1, 2020				
BAL-003-2 R3	BAL-003-2 RS	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-003-1.1 Adopted 2016 Assessment Report 9 R-32-16	2. No changes to the requirement from the previous version.	N/A	BA	Docket No. RD20-9-000 Issued July 15, 2020	15-Jul-20	BAL-003-2 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec 1, 2020				
BAL-003-2 R4	BAL-003-2 RS	Title: Frequency Response and Frequency Bias Setting To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.	BAL-003-1.1 Adopted 2016 Assessment Report 9 R-32-16	2. No changes to the requirement from the previous version.	N/A	BA	Docket No. RD20-9-000 Issued July 15, 2020	15-Jul-20	BAL-003-2 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first operating year (which begins on December 1st) that is 90 days after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Dec 1, 2020				
FAC-002-3 R1	RSAW N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	3. No changes to the requirement from previous version.	N/A	TP, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	FAC-002-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
FAC-002-3 R2	RSAW N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	3. No changes to the requirement from previous version.	N/A	GO, TP, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	FAC-002-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
FAC-002-3 R3	RSAW N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	3. Remove Applicability Lead Severing Entity	N/A	DP, TO, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	FAC-002-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
FAC-002-3 R4	RSAW N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	3. No changes to the requirement from previous version.	N/A	TO, TP, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	FAC-002-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GP, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
											One Time (\$)	Ongoing (\$)	
FAC-002-3 RS	RSAW N/A	Title: Facility Interconnection Studies To study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.	FAC-002-2 Adopted 2015 Assessment Report 8 R-38-15	No changes to the requirement from previous version.	N/A	GO, TP, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	FAC-002-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	50	50	Immediately after adoption by the BCUC
FAC-013-2 R1 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	PC			Recommend for Retirement RM19-16-000 & RM19-17-000 Order No. 873 Issued Sept 17, 2020				
FAC-013-2 R2 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	PC			Recommend for Retirement RM19-16-000 & RM19-17-000 Order No. 873 Issued Sept 17, 2020				
FAC-013-2 R3 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	PC			Recommend for Retirement RM19-16-000 & RM19-17-000 Order No. 873 Issued Sept 17, 2020				
FAC-013-2 R4 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	PC			Recommend for Retirement RM19-16-000 & RM19-17-000 Order No. 873 Issued Sept 17, 2020				
FAC-013-2 R5 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	PC			Recommend for Retirement RM19-16-000 & RM19-17-000 Order No. 873 Issued Sept 17, 2020				
FAC-013-2 R6 RETIRE	N/A Retired	Title: Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon To ensure that Planning Coordinators have a methodology for, and perform an annual assessment to identify potential future Transmission System weaknesses and limiting Facilities that could impact the Bulk Electric System's (BES) ability to reliably transfer energy in the Near-Term Transmission Planning Horizon.	FAC-013-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	PC			Recommend for Retirement RM19-16-000 & RM19-17-000 Order No. 873 Issued Sept 17, 2020				
INT-004-3.1 R1 RETIRE	N/A Retired	Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	INT-004-2 Adopted 2011 Assessment Report 3 G-162-11	N/A - Retired Standard	N/A - Retired Standard	PSE	RD14-4-000 Issued Nov 26, 2014		Recommend for Retirement RM19-16-000 & RM19-17-000 Order No. 873 Issued Sept 17, 2020				
INT-004-3.1 R2 RETIRE	N/A Retired	Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	FAC-014-1 Adopted 2011 Assessment Report 3 G-162-11	N/A - Retired Standard	N/A - Retired Standard	PSE	RD14-4-000 Issued Nov 26, 2014		Recommend for Retirement RM19-16-000 & RM19-17-000 Order No. 873 Issued Sept 17, 2020				
INT-004-3.1 R3 RETIRE	N/A Retired	Title: Dynamic Transfers To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.	FAC-014-1 Adopted 2011 Assessment Report 3 G-162-11	N/A - Retired Standard	N/A - Retired Standard	BA	RD14-4-000 Issued Nov 26, 2014		Recommend for Retirement RM19-16-000 & RM19-17-000 Order No. 873 Issued Sept 17, 2020				

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BDOC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs		BDOC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)		
INT-006-5 R1	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006-4 Adopted 2015 Assessment Report 8 R-38-15	5. No changes to the requirement from previous version	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
INT-006-5 R2	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006-4 Adopted 2015 Assessment Report 8 R-38-15	5. No changes to the requirement from previous version	N/A	BA, TSP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
INT-006-5 R3	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006-4 Adopted 2015 Assessment Report 8 R-38-15	5. Remove Part 3.1. If a Balancing Authority denies a Reliability Adjustment Arranged Interchange, the Balancing Authority must communicate that fact to its Reliability Coordinator no more than 10 minutes after the denial.	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
INT-006-5 R4 Reserved	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006-4 Adopted 2015 Assessment Report 8 R-38-15	5. Remove requirement 4 in its entirety. This requirement is now co-located in Intermittent.	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
INT-006-5 R5 Reserved	RSAW N/A	Title: Evaluation of Interchange Transactions To ensure that responsible entities conduct a reliability assessment of each Arranged Interchange before it is implemented.	INT-006-4 Adopted 2015 Assessment Report 8 R-38-15	5. Remove requirement 4 in its entirety. This requirement is now co-located in Intermittent.	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-006-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
INT-009-2.1 R2	INT-009-2.1 R	Title: Implementation of Interchange To ensure that Balancing Authorities implement the Interchange as agreed upon in the Interchange confirmation process.	INT-009-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	BA	Docket No. RD20-4-000 INT-009-2.1	30-Oct-20	Recommend for Retirement per Docket No. RD20-4-000				
INT-009-3 R1	RSAW N/A	Title: Implementation of Interchange To ensure that Balancing Authorities implement the Interchange as agreed upon in the Interchange confirmation process.	INT-009-2.1 Adopted 2015 Assessment Report 8 R-38-15	3. Remove reference to INT-010-2	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-009-3 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
INT-009-3 R3	RSAW N/A	Title: Implementation of Interchange To ensure that Balancing Authorities implement the Interchange as agreed upon in the Interchange confirmation process.	INT-009-2.1 Adopted 2015 Assessment Report 8 R-38-15	3. No changes to the requirement from previous version	N/A	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	INT-009-3 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
INT-010-2.1 R1	INT-010-2.1 R	Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or Implemented Interchange to address reliability.	INT-010-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	BA	Recommend for Retirement	Order No. 873 Issued Sept 17, 2020	Recommend for Retirement				

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BDOC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BDOC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
INT-010-2.1 R2	INT-010-2.1 R	Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or Implemented Interchange to address reliability.	INT-010-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	BA		Recommendation for Retirement, RM19-16-000 & RM19-17-000	Recommend for Retirement Order No. 973 Issued Sept 17, 2020			
INT-010-2.1 R3	INT-010-2.1 R	Title: Interchange Initiation and Modification for Reliability To provide guidance for required actions on Confirmed Interchange or Implemented Interchange to address reliability.	INT-010-1 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	BA		Recommendation for Retirement, RM19-16-000 & RM19-17-000	Recommend for Retirement Order No. 973 Issued Sept 17, 2020			
IRO-002-6 R1	IRO-002-6 R	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions. Regional Variance Purpose: To develop a methodology that creates models for performing Operational Planning Analyses and Real-time Assessments.	IRO-002-5 Adopted 2018 Assessment Report 11 R-33-18	N/A - Retired Standard	N/A - Retired Standard	RC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	Recommend for Retirement per Docket No. RD20-4-000			
IRO-002-7 D A.7	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	IRO-002-5 Adopted 2018 Assessment Report 11 R-33-18	7 - New Regional Variance included, requires RC to develop in coordination with other DCA a common methodology to model and monitor elements necessary for operational awareness, D.A.7.1 to D.A.7.8 sub requirements specify the minimum content of the methodology.	N/A	RC	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	IRO-002-7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021			
IRO-002-7 D A.8	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	IRO-002-5 Adopted 2018 Assessment Report 11 R-33-18	7 - New Regional Variance included, requires RC to use the methodologies developed in D.A.7.	N/A	RC	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	IRO-002-7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021			
IRO-002-7 R1 Reserve	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	IRO-002-5 Adopted 2018 Assessment Report 11 R-33-18	7 - Remove requirement 1 in its entirety. The requirement is now reserved	N/A	RC	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	IRO-002-7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021			
IRO-002-7 R2	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	IRO-002-5 Adopted 2018 Assessment Report 11 R-33-18	7 - No changes to the requirement from the previous version	N/A	RC	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	IRO-002-7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021			
IRO-002-7 R3	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	IRO-002-5 Adopted 2018 Assessment Report 11 R-33-18	7 - No changes to the requirement from the previous version	N/A	RC	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	IRO-002-7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021			
IRO-002-7 R4	RSAW N/A	Title: Reliability Coordination - Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	IRO-002-5 Adopted 2018 Assessment Report 11 R-33-18	7 - No changes to the requirement from the previous version	N/A	RC	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	IRO-002-7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Sustainability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)		
IRO-002-7 R5	RSAW N/A	Title: Reliability Coordination – Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	IRO-002-5 Adopted 2018 Assessment Report 11 R-33-18	7- No changes to the requirement from the previous version	N/A	RC	Docket No. RM19-16-000 & RM19-17-000 Issued Sept. 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec. 14, 2020	IRO-002-7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021				
IRO-002-7 R6	RSAW N/A	Title: Reliability Coordination – Monitoring and Analysis To provide System Operators with the capabilities necessary to monitor and analyze data needed to perform their reliability functions.	IRO-002-5 Adopted 2018 Assessment Report 11 R-33-18	7- No changes to the requirement from the previous version	N/A	RC	Docket No. RM19-16-000 & RM19-17-000 Issued Sept. 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec. 14, 2020	IRO-002-7 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-7, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr. 1, 2021				
IRO-010-3 R1	RSAW N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	IRO-010-3 Adopted 2017 Assessment Report 10 R-39-17	3- No changes to the requirement from previous version	N/A	RC	Docket No. RD20-4-000 Issued Oct. 30, 2020	30-Oct-20	IRO-010-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021				
IRO-010-3 R2	RSAW N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	IRO-010-3 Adopted 2017 Assessment Report 10 R-39-17	3- No changes to the requirement from previous version	N/A	RC	Docket No. RD20-4-000 Issued Oct. 30, 2020	30-Oct-20	IRO-010-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021				
IRO-010-3 R3	RSAW N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	IRO-010-2 Adopted 2017 Assessment Report 10 R-39-17	3- Remove applicability Lead Service Entity	N/A	RC	Docket No. RD20-4-000 Issued Oct. 30, 2020	30-Oct-20	IRO-010-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021				
IRO-010-3 R3	RSAW N/A	Title: Reliability Coordinator Data Specification and Collection To prevent instability, uncontrolled separation, or cascading outages that adversely impact reliability by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.	IRO-010-2 Adopted 2017 Assessment Report 10 R-39-17	None	N/A	BA, DP, GO, GOP, TO, TOP	Docket No. RD20-4-000 Issued Oct. 30, 2020	30-Oct-20	IRO-010-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr. 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BIOC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BIOC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)
MOD-020-0 R1	MOD-020-0 R	Title: Providing Interruptible Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators. To ensure that assessments and validation of past events and databases can be performed, reporting of actual demand data is needed. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcement for continued reliability. In addition to assist in proper real-time operating, load information related to controllable Demand-Side Management programs is needed.	MOD-020-0 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	LSE, RP, TP	Docket No. RM06-16-000 Issued Mar 16, 2007	Recommendation for Retirement, RM19-16-000 & RM19-17-000	Recommendation for Retirement, Order No. 873 Issued Sept 17, 2020			
MOD-020-0 R1	MOD-020-0 R	Title: Providing Interruptible Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators. To ensure that assessments and validation of past events and databases can be performed, reporting of actual demand data is needed. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcement for continued reliability. In addition to assist in proper real-time operating, load information related to controllable Demand-Side Management programs is needed.	MOD-020-0 Adopted 2008 Assessment Report 1 G-67-09	N/A - Retired Standard	N/A - Retired Standard	TSP	Docket No. RM06-16-000 Issued Mar 16, 2007	Recommendation for Retirement, RM19-16-000 & RM19-17-000	Recommendation for Retirement, Order No. 873 Issued Sept 17, 2020			
MOD-031-3 R1	RSAW N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MOD-031-2 Adopted 2017 Assessment Report 10 R-39-17	3 - Remove applicability Load Servina Entity	N/A	BA, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	MOD-031-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
MOD-031-3 R2	RSAW N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MOD-031-2 Adopted 2017 Assessment Report 10 R-39-17	3 - No changes to the requirement from previous version	N/A	BA, TP, RP, DP, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	MOD-031-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
MOD-031-3 R3	RSAW N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MOD-031-2 Adopted 2017 Assessment Report 10 R-39-17	3 - No changes to the requirement from previous version	N/A	BA, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	MOD-031-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
MOD-031-3 R4	RSAW N/A	Title: Demand and Energy Data To provide authority for applicable entities to collect Demand, energy and related data to support reliability studies and assessments and to enumerate the responsibilities and obligations of requestors and respondents of that data.	MOD-031-2 Adopted 2017 Assessment Report 10 R-39-17	3 - No changes to the requirement from previous version	N/A	BA, TP, RP, DP, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	MOD-031-3 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
											One Time (\$)	Ongoing (\$)	
MOD-033-2 R1	RSAW N/A	Title: Steady-State and Dynamic System Model Validation To establish consistent validation requirements to facilitate the collection of accurate data and building of planning models to analyze the reliability of the interconnected transmission system.	MOD-033-1 Adopted 2015 Assessment Report 8 R-38-15	2. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	MOD-033-2 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
MOD-033-2 R2	RSAW N/A	Title: Steady-State and Dynamic System Model Validation To establish consistent validation requirements to facilitate the collection of accurate data and building of planning models to analyze the reliability of the interconnected transmission system.	MOD-033-1 Adopted 2015 Assessment Report 8 R-38-15	2. No changes to the requirement from previous version	N/A	RC, TOP	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	MOD-033-2 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
NUC-001-4 ALL Requirement	RSAW N/A	Title: Nuclear Plant Interface Coordination This standard requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.	N/A	N/A	N/A	TO, TOP, TP, TSP, BA, RC, DP, GO, GOP, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	N/A	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
PRC-004-6 R1	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(i) Adopted 2016 Assessment Report 9 R-32-16	6. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
PRC-004-6 R2	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(i) Adopted 2016 Assessment Report 9 R-32-16	6. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
PRC-004-6 R3	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(i) Adopted 2016 Assessment Report 9 R-32-16	6. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
PRC-004-6 R4 Reserve	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(i) Adopted 2016 Assessment Report 9 R-32-16	6. Remove requirement 4 in its entirety. This requirement is now considered "residual"	N/A	DP, GO, TO	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	Need to update documentation and implement training.	\$2,000 to \$5,000	0	Six months to a year after adoption by BCUC

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental New Costs	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
										One Time (\$)	Ongoing (\$)		
PRC-004-6 RS	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(i) Adopted 2016 Assessment Report 9 R-32-16	6. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
PRC-004-6 RG	RSAW N/A	Title: Protection System Misoperation Identification and Correction Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.	PRC-004-5(i) Adopted 2016 Assessment Report 9 R-32-16	6. No changes to the requirement from previous version	N/A	DP, GO, TO	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	PRC-004-6 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
PRC-006-4 D.A.3	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
PRC-006-4 D.A.4	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. Update reference to PRC-006-4	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
PRC-006-4 D.B.1	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	DP, DPUF, PC, TO	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
PRC-006-4 D.B.11	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BIOC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BIOC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
PRC-006-4 D.B.12	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 D.B.2	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PA, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 D.B.3	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 D.B.4	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 R1	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BDOC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BDOC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
PRC-006-4 R10	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	TO	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 R11	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PA, PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 R12	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 R13	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 R14	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BIOC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BIOC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
PRC-006-4 R16	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4 - No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 R2	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4 - No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 R3	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4 - Update reference to PRC-006-4	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 R4	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4 - Update reference to PRC-006-4	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
PRC-006-4 R5	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4 - No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Sustainability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)		
PRC-006-4 RG	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
PRC-006-4 RT	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
PRC-006-4 RB	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
PRC-006-4 RR	RSAW N/A	Title: Automatic Underfrequency Load Shedding To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.	PRC-006-3 Adopted 2018 Assessment Report 11 R-33-18	4. No changes to the requirement from previous version	N/A	PC	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	PRC-006-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
PRC-024-3 D A 2	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024-2 Adopted 2016 Assessment Report 9 R-32-16	3. New Regional Variance included requires GO and TO to set its applicable voltage protection in accordance with PRC-014 Attachment 2a such that the applicable protection does not cause the generating resource to trip or cease injecting current during a voltage excursion within the "no tripe zone" at the high of the USU or NPT.	N/A	GO	Docket No. RD20-7-000 Issued July 9, 2020 Publish Date: TBA	Comments on the collection of information are due September 29, 2020.	PRC-024-3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2022	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
PRC-024-3 R1	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024-2 Adopted 2016 Assessment Report 9 R-32-16	3. Each Generator Owner shall set its applicable frequency protection in accordance with PRC-024 Attachment 1 such that the applicable protection does not cause the generating resource to trip or cease injecting current within the "no tripe zone" during a frequency excursion with the following exceptions: - Applicable frequency protection may be set to trip or cease injected current within a portion of the "no tripe zone" for documented and commercialized regulatory or equipment limitations in accordance with Requirement D3.	N/A	GO	Docket No. RD20-7-000 Issued July 9, 2020 Publish Date: TBA	Comments on the collection of information are due September 29, 2020.	PRC-024-3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2022	Need to review asset settings, update documentation and implement training.	\$5,000 to \$10,000	0	Six months to a year after adoption by BCUC

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Sustainability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
											One Time (\$)	Ongoing (\$)	
PRC-024-3 R2	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024-2 Adopted 2016 Assessment Report 9 R-32-16	1. Each Generator Owner shall set its applicable voltage protection in accordance with PRC-024 Attachment 4, such that the applicable protection trips and isolates the generating resource to the right side of the bus or the "no trip zone" during a voltage excursion at the high side of the bus or NPT subject to the following exceptions: - If the Transmission Planner allows less stringent voltage protection settings than those required to meet PRC-024 Attachment 2, then the Generator Owner may set its protection within the voltage recovery characteristics of a location-specific Transmission Planner's study. - Applicable voltage protection may be set to trip or cause tripping current during a voltage excursion within a portion of the "no trip zone" for documented and communicated regulatory or equipment limitations in accordance with Requirement B3.	N/A	GO	Docket No. RD20-7-000 Issued July 9, 2020 Publish Date TBA	Comments on the collection of information are due September 29, 2020.	PRC-024-3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2022	Need to review asset settings, update documentation and implement training.	\$5,000 to \$10,000	0	Six months to a year after adoption by BCUC
PRC-024-3 R3	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024-2 Adopted 2016 Assessment Report 9 R-32-16	3. Each Generator Owner shall document each known regulatory or equipment limitation that prevents an applicable generating resource(s) with frequency or voltage protection from meeting the protection setting criteria in Requirements B1 or B2, including but not limited to study results, experience from an actual event, or manufacturer's advice. 3.1. The Generator Owner shall communicate the documented regulatory or equipment limitation, or the removal of a previously documented regulatory or equipment limitation, to its Planning Coordinator and Transmission Planner within 30 calendar days of any of the following: - Identification of a regulatory or equipment limitation. - Repair of the equipment causing the limitation that removes the limitation. - Replacement of the equipment causing the limitation with equipment that removes the limitation. - Creation or adjustment of an equipment limitation caused by consumption of the cumulative 3,600 life-time frequency excursion allowance.	N/A	GO, PC	Docket No. RD20-7-000 Issued July 9, 2020 Publish Date TBA	Comments on the collection of information are due September 29, 2020.	PRC-024-3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2022	Need to review asset settings, update documentation and implement training.	\$5,000 to \$10,000	0	Six months to a year after adoption by BCUC
PRC-024-3 R4	RSAW N/A	Title: Frequency and Voltage Protection Settings for Generating Resources To set protection such that generating resource(s) remain connected during defined frequency and voltage excursions in support of the Bulk Electric System (BES).	PRC-024-2 Adopted 2016 Assessment Report 9 R-32-16	1. Each Generator Owner shall provide its applicable protection settings, associated with Requirements B1 and B2 to the Planning Coordinator or Transmission Planner that models the associated generating resource(s) within 30 calendar days of receipt of a written request for the data and within 60 calendar days of any change to those previously requested settings unless directed by the requesting Planning Coordinator or Transmission Planner that the reporting of protection setting changes is not required.	N/A	GO, PC	Docket No. RD20-7-000 Issued July 9, 2020 Publish Date TBA	Comments on the collection of information are due September 29, 2020.	PRC-024-3 Implementation Plan Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Oct 1, 2022	Need to review asset settings, update documentation and implement training.	\$5,000 to \$10,000	0	Six months to a year after adoption by BCUC
TOP-001-5 R1	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 R-33-18	5. No changes to the requirement from previous version	TOP-001-5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 15, 2020	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-5 R10	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 R-33-18	5. No changes to the requirement from previous version	TOP-001-5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-5 R11	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 R-33-18	5. No changes to the requirement from previous version	TOP-001-5 Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-5 R12	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 R-33-18	5. No changes to the requirement from previous version	TOP-001-5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-5 R13	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 R-33-18	5. No changes to the requirement from previous version	TOP-001-5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GP, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BIOC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs		BIOC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)	
TOP-001-S R14	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R15	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R16	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R17	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R18	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R19 Reseved	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. Remove requirement 4 in its entirety. This requirement is now considered "reseved"	TOP-001-S Mapping Document		Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R2	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R20	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)	
TOP-001-S R21	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R22 Rescued	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. Remove requirement 4 in its entirety. This requirement is now considered "Rescued".	TOP-001-S Mapping Document		Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R23	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R24	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	BA	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-S R3	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	BA, DP, GOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
TOP-001-S R4	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	BA, DP, GOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
TOP-001-S R5	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	DP, GOP, TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC
TOP-001-S R6	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 8-33-18	5. No changes to the requirement from previous version	TOP-001-S Mapping Document	DP, GOP, TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-S Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	\$0	Immediately after adoption by the BCUC

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUIC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs		BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)	
TOP-001-5.R7	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 R-33-18	5. No changes to the requirement from previous version	TOP-001-5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-5.R8	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 R-33-18	5. No changes to the requirement from previous version	TOP-001-5 Mapping Document	TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-001-5.R9	RSAW N/A	Title: Transmission Operations To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.	TOP-001-4 Adopted 2018 Assessment Report 11 R-33-18	5. No changes to the requirement from previous version	TOP-001-5 Mapping Document	BA, TOP	Docket No. RM19-16-000 & RM19-17-000 Issued Sept 17, 2020	Docket No. RM19-16-000 & RM19-17-000 Effective Dec 14, 2020	TOP-001-5 Implementation Plan Reliability Standards FAC-008-4, INT-006-5, INT-009-3, IRO-002-6, PRC-004-6, TOP-001-5, and VAR-001-6 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. US Enforcement Date of Standard: Apr 1, 2021				
TOP-003-4.R1	RSAW N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003-3 Adopted 2017 Assessment Report 10 R-39-17	4. No changes to the requirement from previous version	N/A	TOP	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	TOP-003-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
TOP-003-4.R2	RSAW N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003-3 Adopted 2017 Assessment Report 10 R-39-17	4. No changes to the requirement from previous version	N/A	BA	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	TOP-003-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				
TOP-003-4.R3	RSAW N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003-3 Adopted 2017 Assessment Report 10 R-39-17	4. No changes to the requirement from previous version	N/A	TOP	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	TOP-003-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021				

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GP, DP, etc.):												
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
										One Time (\$)	Ongoing (\$)	
TOP-003-4 R4	RSAW N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003-3 Adopted 2017 Assessment Report 10 R-39-17	4. No changes to the requirement from previous version	N/A	BA	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	TOP-003-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021			
TOP-003-4 R5	RSAW N/A	Title: Operational Reliability Data To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.	TOP-003-3 Adopted 2017 Assessment Report 10 R-39-17	4. Remove applicability Load Servicing entity	N/A	BA, DP, GP, GOP, TOP	Docket No. RD20-4-000 Issued Oct 30, 2020	30-Oct-20	TOP-003-4 Implementation Plan Reliability Standards FAC-002-3, IRO-010-3, MOD-031-3, MOD-033-2, NUC-001-4, PRC-006-4, and TOP-003-4 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction. US Enforcement Date of Standard: Apr 1, 2021	No incremental changes expected.	\$0	Immediately after adoption by the BCUC
TPL-001-5.1 R1	RSAW N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TPL-001-4 Adopted 2015 Assessment Report 8 R-38-15	5.1 Updated requirement body to reference MOD-002 Part 1.1.2, and subparts have been deleted	TPL-001-5 Mapping Document	TP	Docket No. RD20-8-000 Issued June 10, 2020, Published TBA	10-Jun-2020	TPL-001-5 Implementation Plan (NOTE: NOT TPL-001-5.1) US Enforcement Date of Standard: July 1, 2023			
TPL-001-5.1 R2	RSAW N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TPL-001-4 Adopted 2015 Assessment Report 8 R-38-15	5.1 - Part 2.1.4 moved to Part 2.1.3. A properly planned Transmission system, should facilitate maintenance outages without Non-Consequential Load Loss, maintain a stable System without cascading and uncontrolled separations. (FERC Order 786, Paragraph 4.1). Therefore, consistent with the principle of TPL-001-5 Requirement R3, Part 2.4 which requires the Transmission Planner and Planning Coordinator to identify those planned events in Table 1 that are expected to produce more severe System impacts on its portion of the BES, only those P1 events in Table 1 expected to produce more severe System impacts on its portion of the BES are to be assessed for System models that include known outages pursuant to Requirement R2, Part 2.1.4. Part 2.1.4 Document internal conforming as reflecting in R2, Part 2.1.4. Part 2.4.3 has been moved back to 2.4.3 as it was in TPL-001-4. Part 2.4.4, TPL-001-4, Part 2.4.3 moved to TPL-001-5, Part 2.4.4 Modified the language to add a stability analysis requirement for P1 events in Table 1, with known outages under appropriate System conditions, that includes similar language to that used for the steady state analysis stated in Requirement R2, Part 2.1.4. For reasons similar to those justifying changes to Requirement R2, Part 2.1.4, the Transmission Planner and Planning Coordinator shall identify those P1 events in Table 1 expected to produce more severe System impacts on its portion of the BES to be assessed for System models that include known outages pursuant to Requirement R2, Part 2.1.4. Part 2.4.5 Consistent with FERC Order 786 Para 89, modified the standard to add Requirement R2, Part 2.4.5, which includes similar language to that used for the steady state analysis stated in Requirement R2, Part 2.1.5 to address stability analysis for severe equipment strategy. Part 2.7 Changed Requirement Subpart reference in Requirement 2, Part 2.7 in standard. Part 2.7 Updated to reflect NERC Glossary Term	TPL-001-5 Mapping Document	TP	Docket No. RD20-8-000 Issued June 10, 2020, Published TBA	10-Jun-2020	TPL-001-5 Implementation Plan (NOTE: NOT TPL-001-5.1) US Enforcement Date of Standard: July 1, 2023			
TPL-001-5.1 R3	RSAW N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TPL-001-4 Adopted 2015 Assessment Report 8 R-38-15	5.1 Part 3.2 Document internal conforming clean up to move the last sentence of Requirement R3, Part 3.5 to Requirement R3, Part 3.2.	TPL-001-5 Mapping Document	TP	Docket No. RD20-8-000 Issued June 10, 2020, Published TBA	10-Jun-2020	TPL-001-5 Implementation Plan (NOTE: NOT TPL-001-5.1) US Enforcement Date of Standard: July 1, 2023			
TPL-001-5.1 R4	RSAW N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TPL-001-4 Adopted 2015 Assessment Report 8 R-38-15	5.1 Part 4.1.1 Updated to reflect NERC Glossary Term Part 4.2 Prior to this change, TPL-001-4 Requirement R4, Part 4.5 discussed analysis performed during studies referenced in TPL-001-4 Requirement R4, Part 4.2. To eliminate confusion and better separate the discussion of studies and analysis from the discussion of the necessary and conditional addition of extreme events in Table 1 that are expected to produce more severe System impacts, identical language from Requirement R4, Part 4.5 was moved to Requirement R4, Part 4.2.	TPL-001-5 Mapping Document	TP	Docket No. RD20-8-000 Issued June 10, 2020, Published TBA	10-Jun-2020	TPL-001-5 Implementation Plan (NOTE: NOT TPL-001-5.1) US Enforcement Date of Standard: July 1, 2023			
TPL-001-5.1 R5	RSAW N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TPL-001-4 Adopted 2015 Assessment Report 8 R-38-15	5.1 No changes to the requirement from the previous version	TPL-001-5 Mapping Document	TP	Docket No. RD20-8-000 Issued June 10, 2020, Published TBA	10-Jun-2020	TPL-001-5 Implementation Plan (NOTE: NOT TPL-001-5.1) US Enforcement Date of Standard: July 1, 2023			
TPL-001-5.1 R6	RSAW N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TPL-001-4 Adopted 2015 Assessment Report 8 R-38-15	5.1 No changes to the requirement from the previous version	TPL-001-5 Mapping Document	TP	Docket No. RD20-8-000 Issued June 10, 2020, Published TBA	10-Jun-2020	TPL-001-5 Implementation Plan (NOTE: NOT TPL-001-5.1) US Enforcement Date of Standard: July 1, 2023			

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GO, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental New Costs	Estimated Incremental New Costs	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)
											One Time (\$)	Ongoing (\$)	
TPL-001-S.1.R7	RSAW N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TPL-001-4 Adopted 2015 Assessment Report 8 R-38-15	5.1 - No changes to the requirement from the previous version	TPL-001-S Mapping Document	TP	Docket No. RD20-8-000 Issued June 10, 2020. Published TBA	10-Jun-2020	TPL-001-S Implementation Plan (NOTE: NOT TPL-001-S.1) US Enforcement Date of Standard: July 1, 2023				
TPL-001-S.1.R8	RSAW N/A	Title: Transmission System Planning Performance Requirements Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.	TPL-001-4 Adopted 2015 Assessment Report 8 R-38-15	5.1 - No changes to the requirement from the previous version	TPL-001-S Mapping Document	TP	Docket No. RD20-8-000 Issued June 10, 2020. Published TBA	10-Jun-2020	TPL-001-S Implementation Plan (NOTE: NOT TPL-001-S.1) US Enforcement Date of Standard: July 1, 2023				
TPL-007-4.D.A.11.3	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - New regional variances	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4.D.A.11.4	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - New regional variances	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4.D.A.11.5	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - New regional variances	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4.D.A.7.3	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - requirement R.A.7.3 - include a timetable, subject to revision by the responsible entity in Part R.A.7.4, for implementing the selected actions from Part 7.3.	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4.D.A.7.4	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - New regional variances	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4.D.A.7.5	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - New regional variances	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4.R1	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - No changes to the requirement from previous version.	N/A	TP, PA, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4.R10	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - No changes to the requirement from previous version.	N/A	GO, TO, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	# standard remains in abeyance by BCUC, no incremental changes are expected. Impact will need to be assessed if this standard is adopted by BCUC.	See comments	See comments	Assessment will need to be conducted if this standard is adopted by BCUC.
TPL-007-4.R11	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - New Requirement	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4.R12	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - No changes to the requirement from previous version.	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4.R13	TPL-007-4.RSAW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4 - No changes to the requirement from previous version.	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020. August 6, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				

Disclaimer: This information has been prepared as input into BC Hydro's fourteenth assessment report on Mandatory Reliability Standards and is based on information available to BC Hydro as of the date sent. It should not be relied upon for any other purpose.

INSERT YOUR ENTITY NAME AND FUNCTIONAL REGISTRATIONS APPLICABLE TO YOUR ENTITY (i.e. TO, DP, GP, DP, etc.):													
FERC Approved New/Revised/Retired Standard/Requirement	RSAW Link	Standard Name and Description	Current BCUC Adopted Standards to be Superseded	FERC Approved Revision	FERC Approved Revision Mapping Document	Functional Applicability of FERC Approved Standards/Requirements	FERC Order No., Order Date and Order Publication Date	Effective Date of FERC Rule Approving the Standard	FERC Approved Standard/Requirement Implementation Time Provided and US Enforcement Date	Stakeholder Comments Organizational Activities and Reliability/Suitability Impact (Press Alt-Enter to insert a carriage return in a cell)	Estimated Incremental/New Costs	BCUC Implementation Time (Press Alt-Enter to insert a carriage return in a cell)	
											One Time (\$)	Ongoing (\$)	
TPL-007-4 R2	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4. No changes to the requirement from previous version.	N/A	GO, TO, TP, PA, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	# standard remains in abeyance by BCUC, no incremental changes are expected. Impact will need to be assessed if this standard is adopted by BCUC.	See comments	See comments	Assessment will need to be conducted if this standard is adopted by BCUC.
TPL-007-4 R3	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4. No changes to the requirement from previous version.	N/A	GO, TO, TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	# standard remains in abeyance by BCUC, no incremental changes are expected. Impact will need to be assessed if this standard is adopted by BCUC.	See comments	See comments	Assessment will need to be conducted if this standard is adopted by BCUC.
TPL-007-4 R4	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4. No changes to the requirement from previous version.	N/A	GO, TO, TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	# standard remains in abeyance by BCUC, no incremental changes are expected. Impact will need to be assessed if this standard is adopted by BCUC.	See comments	See comments	Assessment will need to be conducted if this standard is adopted by BCUC.
TPL-007-4 R5	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4. No changes to the requirement from previous version.	N/A	GO, TO, TP, PA, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	# standard remains in abeyance by BCUC, no incremental changes are expected. Impact will need to be assessed if this standard is adopted by BCUC.	See comments	See comments	Assessment will need to be conducted if this standard is adopted by BCUC.
TPL-007-4 R6	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4. No changes to the requirement from previous version.	N/A	GO, TO, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	# standard remains in abeyance by BCUC, no incremental changes are expected. Impact will need to be assessed if this standard is adopted by BCUC.	See comments	See comments	Assessment will need to be conducted if this standard is adopted by BCUC.
TPL-007-4 R7	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4. Change in Part 7.3 include a timetable, subject to approval for any extension sought under Part 7.4 for implementing the selected actions from part 7.1. Part 7.4 to be submitted to the Compliance Enforcement Authority (CEA) with a request for extension of time if the responsible entity is unable to implement the CAP within the timetable provided in Part 7.3. The submitted CAP shall document the following: Part 7.4.1 Circumstances causing the delay for fully or partially implementing the selected actions in Part 7.1 and how those circumstances are beyond the control of the responsible entity. Part 7.4.2 Remove requirement 7.4.2 in its entirety. Part 7.4.3 Added requirement 7.4.3. Part 7.5.1 If a recipient of the CAP provides documented comments on the CAP, the responsible entity shall provide a documented response to that recipient within 90 calendar days of receipt of those comments	N/A	GO, TO, TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020	# standard remains in abeyance by BCUC, no incremental changes are expected. Impact will need to be assessed if this standard is adopted by BCUC.	See comments	See comments	Assessment will need to be conducted if this standard is adopted by BCUC.
TPL-007-4 R8	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4. Delete requirement 8.3	N/A	TP, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				
TPL-007-4 R9	TPL-007-4 R5AW	Title: Transmission System Planned Performance for Geomagnetic Disturbance Establish requirements for Transmission system planned performance during geomagnetic disturbance (GMD) events.	TPL-007-3 Adopted 2020 Assessment Report 13 R-19-20	4. No changes to the requirement from previous version.	N/A	TP, PA, PC	Docket No. RD20-3-000 Issued March 19, 2020. Published April 16, 2020.	TPL-007-4 Comments on the collection of information are due August 6, 2020.	TPL-007-4 Implementation Plan Implementation Time: first day of the first calendar quarter that is six (6) months following applicable regulatory approval. US Enforcement Date: Oct-01-2020				

**Mandatory Reliability Standards
Assessment Report No. 14**

Appendix D

Draft Order

ORDER NUMBER

R-xx-xx

IN THE MATTER OF

the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

British Columbia Hydro and Power Authority (BC Hydro)
Filing for Approval of Mandatory Reliability Standards Assessment Report No. 14

BEFORE:

Commissioner
Commissioner
Commissioner

on Date

ORDER

WHEREAS:

- A. On April 30, 2021, the British Columbia Hydro and Power Authority (BC Hydro) filed Mandatory Reliability Standards (MRS) Assessment Report No. 14 (Report 14) with the British Columbia Utilities Commission (BCUC), pursuant to section 125.2(3) of the *Utilities Commission Act* (UCA), assessing one new standard and seven revised standards (collectively, Revised Standards). The Revised Standards were all developed by the North American Electric Reliability Corporation (NERC) and approved by the Federal Energy Regulatory Commission (FERC) with an order effective within the period from December 1, 2019 and November 30, 2020 (2020 Assessment Period) inclusive;
- B. The 2020 Assessment Period also includes an additional four revised standards, MOD-033-1, PRC-006-4, TPL-001-5.1 and TPL-007-4, that contain requirements with dependency on and/or actions solely by the Planning Coordinator (PC) function. The functional registration of the Planning Authority/Planning Coordinator role for the Province of B.C. remains outstanding. Therefore, these four reliability standards are being assessed under a separate Planning Coordinator Assessment Report, as outlined in detail in Report 14, section 2.1;
- C. The Revised Standards are all based on defined terms contained in the NERC Glossary of Terms used in Reliability Standards dated October 8, 2020 (NERC Glossary). No new, revised or retired defined terms were contained in the NERC Glossary; however, BC Hydro requests that the NERC Glossary be adopted by the BCUC in conjunction with the Revised Standards to achieve and maintain consistency with NERC reliability standards;

- D. In Report 14, BC Hydro recommends the eight Revised Standards are suitable for adoption in British Columbia (B.C.) at this time as they will preserve or enhance the reliability of the bulk electric system, and serve the public interest;
- E. By Order R-XX-20 dated MMM DD, 2021, BC Hydro was directed to publish a notice of process to the public and entities registered in the MRS Program (Entities) for consideration of the recommendations found in Report 14 along with the established regulatory timetable;
- F. On MMM DD, 2021, comments were received from xxxxxx;
- G. Pursuant to section 125.2(6) of the UCA, the BCUC must adopt the reliability standards addressed in the report if the BCUC considers that the reliability standards are required to maintain or achieve consistency in B.C. with other jurisdictions that have adopted the reliability standards; and
- H. The BCUC has reviewed and considered Report 14, the Revised Standards assessed therein and comments received from Entities and considers that adoption of the recommendations in Report 14 is warranted. Although not assessed by BC Hydro, the BCUC considers that the compliance provisions of the reliability standards (Compliance Provisions) should be adopted to maintain compliance monitoring consistency with other jurisdictions that have adopted the reliability standards with the Compliance Provisions. The BCUC considers it appropriate to provide effective dates for B.C. Entities to come into compliance with the Revised Standards adopted in this Order.

NOW THEREFORE pursuant to section 125.2(3) and 125.2(6) of the UCA, which, among other things, provides the BCUC exclusive jurisdiction to determine whether a reliability standard is in the public interest and should be adopted in B.C., the BCUC orders as follows:

1. All eight Revised Standards assessed in Report 14 are adopted with effective dates as identified in Table 1 of Attachment A to this order. Each standard to be superseded by a Revised Standard adopted in this Order shall remain in effect until the effective date of the Revised Standard superseding it.
2. Attachment B to this Order lists all the reliability standards adopted by the BCUC and effective in B.C. as of the dates shown. The effective dates for the reliability standards listed in Attachment B supersede the effective dates that were included in any similar list appended to any previous order of the BCUC.
3. Individual requirements within reliability standards that incorporate, by reference, reliability standards that have not been adopted by the BCUC, are of no force and effect in B.C. and individual requirements or sub-requirements within reliability standards, which the BCUC has adopted but for which the BCUC has not determined an effective date, are of no force and effect in B.C.
4. Defined terms set out in the reliability standards bear the same meaning as those set out in the NERC Glossary dated October 8, 2020. Other terms in the NERC Glossary, which do not include a United States FERC approval date on or before November 30, 2020, are of no force or effect in B.C.
5. All defined terms listed in Attachment C to this Order are in effect in B.C. as of the effective dates indicated.
6. The Compliance Provisions as defined in the Rules of Procedure for Reliability Standards in British Columbia that accompany each of the adopted reliability standards, are approved in the form directed by the BCUC and as amended from time to time.

7. The Revised Standards in their written form are adopted as set out in Attachment E to this Order.
8. The reliability standards adopted in B.C. will be posted on the Western Electricity Coordinating Council website with a link from the BCUC website.
9. Entities subject to Mandatory Reliability Standards are required to report to the BCUC and may, on a voluntary basis, report to NERC or to FERC.

DATED at the City of Vancouver, in the Province of British Columbia, this (XX) day of (Month Year).

BY ORDER

(X. X. last name)
Commissioner

Attachments

DRAFT

Table 1 British Columbia Utilities Commission Reliability Standards with Effective Dates as Adopted

	Standard	Standard Name	Effective Date	Type	BCUC Approved Standard(s) Being Superseded¹
1	BAL-003-2	Frequency Response and Frequency Bias Setting	First day of the first calendar quarter, after BCUC adoption.	Revised	BAL-003-1.1
2	CIP-012-1	Cyber Security – Communications between Control Centers	The first day of the first calendar quarter that is 24 calendar months after BCUC adoption.	New	N/A; New standard
3	FAC-002-3	Facility Interconnection Studies	The first day of the first calendar quarter that is three months after BCUC adoption.	Revised	FAC-002-2
4	IRO-010-3	Reliability Coordinator Data Specification and Collection	The first day of the first calendar quarter that is three months after BCUC adoption.	Revised	IRO-010-2
5	MOD-031-3	Demand and Energy Data	The first day of the first calendar quarter that is three months after BCUC adoption.	Revised	MOD-031-2
6	NUC-001-4	Nuclear Plant Interface Coordination	Immediately after BCUC adoption.	Revised	NUC-001-3
7	PRC-024-3	Frequency and Voltage Protection Settings for Generating Resources	The first day of the first calendar quarter that is 24 months after BCUC adoption	Revised	PRC-024-2
8	TOP-003-4	Operational Reliability Data	The first day of the first calendar quarter that is three months after BCUC adoption.	Revised	TOP-003-3

¹ BCUC approved reliability standard or reliability standard held in abeyance by the BCUC to be superseded by the replacement or revised reliability standard assessed.

B.C. Reliability Standards

Standard	Name	BCUC Order Adopting	Effective Date
BAL-001-2	Real Power Balancing Control Performance	R-14-16	July 1, 2016
BAL-002-3	Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event	R-21-19	April 1, 2020
BAL-002-WECC-2a	Contingency Reserve	R-39-17	July 26, 2017
BAL-003-1.1 ¹	Frequency Response and Frequency Bias Setting	R-32-16A	October 1, 2016
BAL-003-2	Frequency Response and Frequency Bias Setting		
BAL-004-WECC-3	Automatic Time Error Correction	R-21-19	January 1, 2020
BAL-005-1	Balancing Authority Control	R-33-18	October 1, 2019
CIP-002-5.1a	Cyber Security — BES Cyber System Categorization	R-33-18	October 1, 2018 and as per B.C.-specific Implementation Plan
CIP-003-8	Cyber Security — Security Management Controls	R-19-20	October 1, 2020 and as per B.C.-specific Implementation Plan
CIP-004-6	Cyber Security — Personnel & Training	R-39-17	October 1, 2018 and as per B.C.-specific Implementation Plan
CIP-005-5 ¹	Cyber Security – Electronic Security Perimeter(s)	R-38-15	October 1, 2018 and as per B.C.-specific Implementation Plan
CIP-005-6	Cyber Security – Electronic Security Perimeter(s)	R-19-20	April 1, 2023 and as per B.C.-specific Implementation Plan

¹ Reliability standard is superseded by the revised/replacement reliability standard listed immediately below it as of the effective date(s) of the revised/replacement reliability standard.

Standard	Name	BCUC Order Adopting	Effective Date
CIP-006-6	Cyber Security — Physical Security of BES Cyber Systems	R-39-17	October 1, 2018 and as per B.C.-specific Implementation Plan
CIP-007-6	Cyber Security — System Security Management	R-39-17	October 1, 2018 and as per B.C.-specific Implementation Plan
CIP-008-5 ¹	Cyber Security – Incident Reporting and Response Planning	R-38-15	October 1, 2018 and as per B.C.-specific Implementation Plan
CIP-008-6	Cyber Security – Incident Reporting and Response Planning	R-19-20	April 1, 2023
CIP-009-6	Cyber Security — Recovery Plans for BES Cyber Systems	R-39-17	October 1, 2018 and as per B.C.-specific Implementation Plan
CIP-010-2 ¹	Cyber Security – Configuration Change Management and Vulnerability Assessments	R-39-17	October 1, 2018 and as per B.C.-specific Implementation Plan
CIP-010-3	Cyber Security – Configuration Change Management and Vulnerability Assessments	R-19-20	April 1, 2023 and as per B.C.-specific Implementation Plan
CIP-011-2	Cyber Security – Information Protection	R-39-17	October 1, 2018 and as per B.C.-specific Implementation Plan
CIP-012-1	Cyber Security – Communications between Control Centers		
CIP-013-1	Cyber Security - Supply Chain Risk Management	R-19-20	April 1, 2023 and as per B.C.-specific Implementation Plan
CIP-014-2	Physical Security	R-32-16A	October 1, 2017 and as per B.C.-specific Implementation Plan
COM-001-3	Communications	R-39-17	R1, R2: October 1, 2017 R3-R13: October 1, 2018
COM-002-4	Operating Personnel Communications Protocols	R-32-16A	April 1, 2017

Standard	Name	BCUC Order Adopting	Effective Date
EOP-003-1 ²	Load Shedding Plans	G-67-09	November 1, 2010
EOP-003-2 ³	Load Shedding Plans	n/a	Adoption held in abeyance at this time ⁴
EOP-004-4	Event Reporting	R-21-19	October 1, 2020
EOP-005-3	System Restoration and Blackstart Resources	R-21-19	October 1, 2020
EOP-006-3	System Restoration Coordination	R-21-19	October 1, 2020
EOP-008-2	Loss of Control Center Functionality	R-21-19	October 1, 2020
EOP-010-1	Geomagnetic Disturbance Operations	R-38-15	R1, R3: October 1, 2016 R2: October 1, 2017
EOP-011-1	Emergency Operations	R-39-17	October 1, 2018
FAC-001-3	Facility Interconnection Requirements	R-33-18	October 1, 2019
FAC-002-2 ¹	Facility Interconnection Studies	R-38-15	October 1, 2015
FAC-002-3	Facility Interconnection Studies		
FAC-003-4	Transmission Vegetation Management	R-39-17	October 1, 2017
FAC-008-3	Facility Ratings	R-32-14	August 1, 2015 R4 and R5: Retired January 21, 2014 ⁵
FAC-010-3	System Operating Limits Methodology for the Planning Horizon	R-39-17	R1–R4: October 1, 2017 R5: Retired
FAC-011-3	System Operating Limits Methodology for the Operations Horizon	R-39-17	October 1, 2017

² Reliability standard would be superseded by EOP-003-2 if adopted in B.C. Adoption of EOP-003-2 pending reassessment.

³ Reliability standard is superseded by EOP-011-1 as of the EOP-011-1 effective date in conjunction with PRC-010-2 Requirement 1 if adopted in B.C. Adoption of PRC-010-2 pending reassessment.

⁴ Unable to assess based on undefined Planning Coordinator/Planning Authority footprints and entities responsible. The BCUC Reasons for Decision for Order No. R-41-13 (page 20), indicated that a separate process would be established to consider this matter as it pertains to B.C.

⁵ On November 21, 2013, FERC Order 788 (referred to as Paragraph 81) approved the retiring of the reliability standard requirements.

Standard	Name	BCUC Order Adopting	Effective Date
FAC-013-1 ⁶	Establish and Communicate Transfer Capability	G-67-09	November 1, 2010
FAC-013-2	Assessment of Transfer Capability for the Near-Term Transmission Planning Horizon	n/a	Adoption held in abeyance at this time ⁴
FAC-014-2	Establish and Communicate System Operating Limits	G-167-10	January 1, 2011
FAC-501-WECC-2	Transmission Maintenance	R-21-19	October 1, 2019
INT-004-3.1	Dynamic Transfers	R-38-15	R1, R2: October 1, 2015 R3: January 1, 2016
INT-006-4	Evaluation of Interchange Transactions	R-38-15	October 1, 2015
INT-009-2.1	Implementation of Interchange	R-38-15	October 1, 2015
INT-010-2.1	Interchange Initiation and Modification for Reliability	R-38-15	October 1, 2015
INT-011-1.1	Intra-Balancing Authority Transaction Identification	R-38-15	October 1, 2015
IRO-001-4	Reliability Coordination – Responsibilities	R-39-17	October 1, 2017
IRO-002-6	Reliability Coordination – Monitoring and Analysis	R-19-20	April 1, 2021
IRO-005-3.1a ^{7,8}	Reliability Coordination - Current Day Operations	R-32-14	August 1, 2014
IRO-006-5	Reliability Coordination – Transmission Loading Relief	R-1-13	April 15, 2013

⁶ Reliability standard would be superseded by the FAC-013-2 if adopted in B.C. Adoption of FAC-013-2 pending reassessment.

⁷ Requirement 3 of the reliability standard is superseded by EOP-010-1 Requirement 2 as of the IRO-002-4 effective date (October 1, 2017; per BCUC Order No. R-39-17).

⁸ Refer to “IRO and TOP Reliability Standards Supersession Mapping” section below.

Standard	Name	BCUC Order Adopting	Effective Date
IRO-006-WECC-3	Qualified Transfer Path Unscheduled Flow (USF) Relief	R-19-20	January 1, 2021
IRO-008-2	Reliability Coordinator Operational Analyses and Real-time Assessments	R-39-17	October 1, 2017
IRO-009-2	Reliability Coordinator Actions to Operate Within IROLs	R-39-17	October 1, 2017
IRO-010-2 ¹	Reliability Coordinator Data Specification and Collection	R-39-17	April 1, 2019
IRO-010-3	Reliability Coordinator Data Specification and Collection		
IRO-014-3	Coordination Among Reliability Coordinators	R-39-17	October 1, 2017
IRO-017-1	Outage Coordination	R-39-17	October 1, 2020
IRO-018-1(i)	Reliability Coordinator Real-time Reliability Monitoring and Analysis Capabilities	R-33-18	April 1, 2020
MOD-001-1a	Available Transmission System Capability	G-175-11	November 30, 2011
MOD-004-1	Capacity Benefit Margin	G-175-11	November 30, 2011
MOD-008-1	Transmission Reliability Margin Calculation Methodology	G-175-11	November 30, 2011
MOD-010-0 ⁹	Steady-State Data for Modeling and Simulation for the Interconnected Transmission System	G-67-09	November 1, 2010
MOD-012-0 ⁹	Dynamics Data for Modeling and Simulation of the Interconnected Transmission System	G-67-09	November 1, 2010

⁹ Reliability standard will be superseded by MOD-032-1 and MOD-033-1 if adopted in B.C. Adoption of MOD-032-1 and MOD-033-1 pending reassessment.

Standard	Name	BCUC Order Adopting	Effective Date
MOD-020-0	Providing Interruptible Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators	G-67-09	November 1, 2010
MOD-025-2	Verification and Data Reporting of Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability	R-38-15 With revised effective dates by Order R-14-20	40% by October 1, 2017 60% by October 1, 2018 80% by October 1, 2019 100% by April 1, 2021
MOD-026-1	Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions	R-38-15	R1: October 1, 2016 R2: 30% by October 1, 2019 50% by October 1, 2021 100% by October 1, 2025 R3-R6: October 1, 2015
MOD-027-1	Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions	R-38-15	R1: October 1, 2016 R2: 30% by October 1, 2019 50% by October 1, 2021 100% by October 1, 2025 R3-R5: October 1, 2015
MOD-028-2	Area Interchange Methodology	R-32-14	August 1, 2014
MOD-029-2a	Rated System Path Methodology	R-39-17	October 1, 2017
MOD-030-3	Flowgate Methodology	R-39-17	October 1, 2017
MOD-031-2 ¹	Demand and Energy Data	R-39-17	April 1, 2018
MOD-031-3	Demand and Energy Data		
MOD-032-1	Data for Power System Modeling and Analysis	R-38-15	Effective date held in abeyance ⁴
MOD-033-1	Steady-State and Dynamic System Model Validation	R-38-15	Effective date held in abeyance ⁴
NUC-001-3 ¹	Nuclear Plant Interface Coordination	R-38-15	January 1, 2016
NUC-001-4	Nuclear Plant Interface Coordination		
PER-002-0	Operating Personnel Training	G-67-09	November 1, 2010

Standard	Name	BCUC Order Adopting	Effective Date
PER-003-2	Operating Personnel Credentials	R-21-19	April 1, 2020
PER-005-2	Operations Personnel Training	R-38-15	R1-R4, R6: October 1, 2016 R5: October 1, 2017
PER-006-1 ¹⁰	Specific Training for Personnel	R-21-19	October 1, 2021
PRC-001-1.1(ii) ¹¹	System Protection Coordination	R-32-16A	October 1, 2016
PRC-002-2	Disturbance Monitoring and Reporting Requirements	R-32-16A	R1, R5: April 1, 2017 R2-R4, R6-R11: staged as per B.C.-specific Implementation Plan R12: July 1, 2017
PRC-004-5(i)	Protection System Misoperation Identification and Correction	R-32-16A	October 1, 2017
PRC-004-WECC-2	Protection System and Remedial Action Scheme Misoperation	R-39-17	October 1, 2017 Retirement: September 30, 2021
PRC-005-1.1b ^{1,14}	Transmission and Generation Protection System Maintenance and Testing	R-32-14	January 1, 2015
PRC-005-2 ^{1,14}	Protection System Maintenance	R-38-15	R1, R2, R5: October 1, 2017 R3, R4: staged as per B.C.-specific Implementation Plan
PRC-005-2(i) ^{1, 14}	Protection System Maintenance	R-32-16A	R1, R2, R5: October 1, 2017 R3, R4: staged as per B.C.-specific Implementation Plan
PRC-005-6	Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance	R-39-17	R1, R2, R5: October 1, 2019 R3, R4: See Implementation Plan

¹⁰ Reliability standard will supersede PRC-001-1.1(ii) R1 as of the effective date of PER-006-1.

¹¹ PRC-001-1.1(ii) Requirement 1 will be superseded by PER-006-1 as of the effective date of PER-006-1; PRC-001-1(ii) Requirements 3 and 4 will be superseded by PRC-027-1 as of the effective date of PRC-027-1; and, the rest of PRC-001-1.1(ii) will be superseded by other reliability standards as of October 1, 2020.

Standard	Name	BCUC Order Adopting	Effective Date
PRC-006-3 ¹²	Automatic Underfrequency Load Shedding	n/a	Adoption held in abeyance at this time ⁴
PRC-007-0 ¹³	Assuring consistency of entity Underfrequency Load Shedding Program Requirements	G-67-09	November 1, 2010
PRC-008-0 ¹⁴	Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance Program	G-67-09	November 1, 2010
PRC-009-0 ¹³	Analysis and Documentation of Underfrequency Load Shedding Performance Following an Underfrequency Event	G-67-09	November 1, 2010
PRC-010-0 ¹	Technical Assessment of the Design and Effectiveness of Undervoltage Load Shedding Program	G-67-09	November 1, 2010 R2: Retired January 21, 2014 ⁵
PRC-010-2	Under Voltage Load Shedding	n/a	Adoption held in abeyance at this time ⁴
PRC-011-0 ¹⁴	Undervoltage Load Shedding system Maintenance and Testing	G-67-09	November 1, 2010

¹² Reliability standard supersedes PRC-006-1 and PRC-006-2 which have been held in abeyance due to the undefined Planning Coordinator/Planning Authority footprints and entities responsible.

¹³ Reliability standard will be superseded by PRC-006-3 if adopted in B.C.

¹⁴ Reliability standard is superseded by PRC-005-6 as per the PRC-005-6 B.C.-specific Implementation Plan.

Standard	Name	BCUC Order Adopting	Effective Date
PRC-012-2	Remedial Action Schemes	R-33-18	October 1, 2021 R1: Attachment 1, Section II Parts 6(d) and 6(e) to be determined. Unable to be assessed at this time. ⁴ R2: Attachment 2, Section I Parts 7(d) and 7(e) to be determined. Unable to be assessed at this time. ⁴ R4: To be determined. Unable to be assessed at this time. ⁴
PRC-015-1 ¹⁵	Remedial Action Scheme Data and Documentation	R-39-17	October 1, 2017
PRC-016-1 ¹⁵	Remedial Action Scheme Misoperations	R-39-17	October 1, 2017
PRC-017-1 ¹⁴	Remedial Action Scheme Maintenance and Testing	R-39-17	October 1, 2017
PRC-018-1 ¹⁶	Disturbance Monitoring Equipment Installation and Data Reporting	G-67-09	November 1, 2010
PRC-019-2	Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection	R-32-16A With revised effective dates by Order R-14-20	40% by October 1, 2017 60% by October 1, 2018 80% by October 1, 2019 100% by April 1, 2021
PRC-021-1 ¹⁷	Under Voltage Load Shedding Program Data	G-67-09	November 1, 2010
PRC-022-1 ¹⁷	Under Voltage Load Shedding Program Performance	G-67-09	November 1, 2010 R2: Retired January 21, 2014 ⁵

¹⁵ Reliability standard is superseded by PRC-012-2 as of the PRC-012-2 effective date.

¹⁶ Reliability standard is superseded by PRC-002-2 as of the PRC-002-2 effective date.

¹⁷ Reliability standard is superseded by PRC-010-2 if adopted in B.C.

Standard	Name	BCUC Order Adopting	Effective Date
PRC-023-2 ^{1, 18}	Transmission Relay Loadability	R-41-13	R1-R5: For circuits identified by sections 4.2.1.1 and 4.2.1.4: January 1, 2016 For circuits identified by sections 4.2.1.2, 4.2.1.3, 4.2.1.5, and 4.2.1.6: To be determined ⁴ R6: To be determined ⁴
PRC-023-4	Transmission Relay Loadability	R-39-17	R1-R5 Circuits 4.2.1.1, 4.2.1.4: October 1, 2017 with the exception of Criterion 6 of R1 which will not become effective until PRC-025-2 R1 is completely effective in B.C. Until then, PRC-023-2 R1, Criterion 6 will remain in effect. R1-R5 Circuits 4.2.1.2, 4.2.1.3, 4.2.1.5, 4.2.1.6 and R6: To be determined ⁴
PRC-024-2 ¹	Generator Frequency and Voltage Protective Relay Settings	R-32-16A With revised effective dates by Order R-14-20	40% by October 1, 2017 60% by October 1, 2018 80% by October 1, 2019 100% by April 1, 2021
PRC-024-3	Frequency and Voltage Protection Settings for Generating Resources		
PRC-025-2	Generator Relay Loadability	R-21-19	October 1, 2019 and staged per B.C. specific Implementation Plan
PRC-026-1	Relay Performance During Stable Power Swings	n/a	Adoption held in abeyance at this time ⁴

¹⁸ PRC-023-2 Requirement 1, Criterion 6 only is superseded by PRC-025-2 as of PRC-025-2's 100 per cent Effective Date.

Standard	Name	BCUC Order Adopting	Effective Date
PRC-027-1 ¹⁹	Coordination of Protection Systems for Performance During Faults	R-21-19	October 1, 2021
TOP-001-1a ⁸	Reliability Responsibilities and Authorities	R-1-13	January 15, 2013
TOP-001-4	Transmission Operations	R-33-18 With revised effective dates by Order R-14-20	April 1, 2021
TOP-002-4	Operations Planning	R-39-17 With revised effective dates by Order R-14-20	April 1, 2021
TOP-003-3 ¹	Operational Reliability Data	R-39-17	April 1, 2019
TOP-003-4	Operational Reliability Data		
TOP-007-0 ⁸	Reporting System Operating Unit (SOL) and Interconnection Reliability Operating Limit (IROL) Violations	G-67-09	November 1, 2010
TOP-008-1 ⁸	Response to Transmission Limit Violations	G-67-09	November 1, 2010
TOP-010-1(i)	Real-time Reliability Monitoring and Analysis Capabilities	R-33-18 With revised effective dates by Order R-14-20	April 1, 2021
TPL-001-4	Transmission System Planning Performance Requirements	R-27-18A	R1: July 1, 2019 R2-R6, R8: July 1, 2020 R7: To be determined ⁴
TPL-007-3	Transmission System Planned Performance for Geomagnetic Disturbance Events	N/A	Adoption held in abeyance at this time ⁴

¹⁹ Reliability standard will supersede PRC-001-1.1(ii) Requirements 3 and 4 as of the effective date of PRC-027-1.

Standard	Name	BCUC Order Adopting	Effective Date
VAR-001-5	Voltage and Reactive Control	R-21-19	October 1, 2019
VAR-002-4.1	Generator Operation for Maintaining Network Voltage Schedules	R-33-18	October 1, 2018
VAR-501-WECC-3.1	Power System Stabilizer (PSS)	R-33-18	October 1, 2020 R3: For units placed into service after the effective date: January 1, 2021 For units placed into service prior to the effective date: January 1, 2024

IRO and TOP Reliability Standards Supersession Mapping

This following mapping shows the supersession of Requirements for the following IRO and TOP reliability standards by the revised/replacement reliability standards indicated which are either adopted or yet to be adopted in B.C. as of the effective date in the “B.C. Reliability Standards” section above:

IRO-005-3.1a — Reliability Coordination - Current Day Operations

TOP-001-1a — Reliability Responsibilities and Authorities

TOP-007-0 — Reporting System Operating Limit (**SOL**) and Interconnection Reliability Operating Limit (**IROL**) Violations

TOP-008-1 — Response to Transmission Limit Violations

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement Being Superseded	Superseding BCUC Approved Standard(s)
Requirements R1-R3	IRO-002-4
Requirement R4	IRO-008-2
Requirements R5 and R8	IRO-001-4 IRO-002-4
Requirements R6 and R7	IRO-008-2 IRO-017-1
Requirement R8	IRO-001-4 IRO-002-4
Requirement R9	IRO-002-4 IRO-010-2
Requirement R10	IRO-009-1 TOP-001-4
Requirement R11	MOD-001-2, Requirement R2 (pending FERC adoption in the U.S. and subsequent assessment and adoption in B.C.)
Requirement R12	IRO-008-2

Standard TOP-001-1a — Reliability Responsibilities and Authorities	
Requirement Being Superseded	Superseding BCUC Approved Standard(s)
Requirements R1, R2, R4, R5, R6	TOP-001-4
Requirement R3	IRO-001-4 TOP-001-4
Requirement R7	TOP-001-4 TOP-003-3 IRO-010-2
Requirement R8	EOP-003-2, Requirement 1 (adoption held in abeyance in B.C. due to PA/PC dependencies) IRO-009-2

Standard TOP 007 0 — Reporting System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) Violations	
Requirement Being Superseded	Superseding BCUC Approved Standard(s)
Requirement R1	IRO-008-2 TOP-001-4
Requirement R2	IRO-009-2 TOP-001-4
Requirement R3	EOP-003-2, Requirement 1 (adoption held in abeyance in B.C. due to PA/PC dependencies) IRO-009-2
Requirement R4	IRO-008-2

Standard TOP-008-1 — Response to Transmission Limit Violations	
Requirement Being Superseded	Superseding BCUC Approved Standard(s)
Requirements R1	EOP-003-2, Requirement 1 (adoption held in abeyance in B.C. due to PA/PC dependencies) TOP-001-4
Requirements R2 and R3	TOP-001-4
Requirement R4	TOP-001-4 TOP-002-4 TOP-003-3

British Columbia (B.C.) Exceptions to the Glossary of Terms Used in North American Electric Reliability Corporation (NERC) Reliability Standards (NERC Glossary)

Updated , 2020

Introduction:

This document is to be used in conjunction with the NERC Glossary dated October 8, 2020.

- The NERC Glossary terms listed in [Table 1](#) below are effective in B.C. on the date specified in the “Effective Date” column.
- [Table 1](#) below outlines the adoption history by the BCUC of the NERC Glossaries in B.C.
- Any NERC Glossary terms and definitions in the NERC Glossary that are not approved by FERC on or before November 30, 2020 are of no force or effect in B.C.
- Any NERC Glossary terms that have been remanded or retired by NERC are of no force or effect in B.C., with the exception of those remanded or retired NERC Glossary terms which have not yet been retired in B.C.
- The Electric Reliability Council of Texas, Northeast Power Coordinating Council and Reliability First regional definitions listed at the end of the NERC Glossary have been adopted by the NERC Board of Trustees for use in regional standards and are of no force or effect in B.C.

Table 1 B.C. Effective Date Exceptions to Definitions in the October 8, 2020 Version of the NERC Glossary

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Actual Frequency (F _A)	-	Report No. 11	R-33-18	Adoption	October 1, 2019
Actual Net Interchange (N _I)	-	Report No. 11	R-33-18	Adoption	October 1, 2019
Automatic Time Error Correction (I _{ATEC})	-	Report No. 11	R-33-18	Adoption	October 1, 2019
Adjacent Balancing Authority	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Alternative Interpersonal Communication	-	Report No. 9	R-32-16A	Adoption	October 1, 2017
Area Control Error (from NERC section of the Glossary)	ACE	Report No. 7	R-32-14	Adoption	October 1, 2014
Area Control Error (from the WECC Regional Definitions section of the Glossary)	ACE	Report No. 7	R-32-14	Retirement	October 1, 2014
Arranged Interchange	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Attaining Balancing Authority	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Automatic Generation Control	AGC	Report No. 11	R-33-18	Adoption	October 1, 2019
Automatic Time Error Correction	-	Report No. 7	R-32-14	Adoption	October 1, 2014
Balancing Authority	-	Report No. 11	R-33-18	Adoption	January 1, 2019

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Balancing Contingency Event ¹	-	Report No. 10	R-39-17	Adoption	January 1, 2018
BES Cyber Asset ²	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
BES Cyber Asset	BCA	Report No. 10	R-39-17	Adoption	October 1, 2018
BES Cyber System	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
BES Cyber System Information	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Blackstart Capability Plan	-	Report No. 7	R-32-14	Retirement	August 1, 2015
Blackstart Resource ²	-	Report No. 6	R-41-13	Adoption	December 12, 2013
Blackstart Resource	-	Report No. 10	R-39-17	Adoption	October 1, 2017

¹ FERC approved terms in the NERC Glossary of Terms as of February 7, 2017; intended for BAL-002-2.

² NERC Glossary term definition is superseded by the revised NERC Glossary term definition listed immediately below it as of the effective date(s) of the revised NERC Glossary term definition.

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Bulk Electric System	BES	Report No. 8	R-38-15	-	October 1, 2015
Bulk-Power System ²	-	Report No. 8	R-38-15	-	October 1, 2015
Bulk-Power System	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Bus-tie Breaker	-	TPL-001-4	R-27-18A	Adoption	July 1, 2019
Cascading	-	Report No. 10	R-39-17	Adoption	October 1, 2017
CIP Exceptional Circumstance	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
CIP Senior Manager	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Composite Confirmed Interchange	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Confirmed Interchange	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Composite Protection System	-	Report No. 9	R-32-16A	Adoption	October 1, 2017
Consequential Load Loss	-	TPL-001-4	R-27-18A	Adoption	July 1, 2019
Contingency Event Recovery Period ¹	-	Report No. 10	R-39-17	Adoption	January 1, 2018
Contingency Reserve ¹	-	Report No. 10	R-39-17	Adoption	January 1, 2018

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Contingency Reserve Restoration Period ¹	-	Report No. 10	R-39-17	Adoption	January 1, 2018
Contributing Schedule (WECC Regional Term)	-	Report No. 13	R-19-20	Retirement	December 31, 2020
Control Center	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Critical Assets	-	Report No. 9	R-32-16A	Retirement	September 30, 2018
Critical Cyber Assets	-	Report No. 9	R-32-16A	Retirement	September 30, 2018
Cyber Assets	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Cyber Security Incident	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Cyber Security Incident	-	Report No. 13	R-19-20	Adoption	April 1, 2023
Demand-Side Management	DSM	Report No. 9	R-32-16A	Adoption	October 1, 2016

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Dial-up Connectivity	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Distribution Provider	DP	Report No. 10	R-39-17	Adoption	October 1, 2017
Disturbance	-	Report No. 11	R-33-18	Retirement	October 1, 2018
Dynamic Interchange Schedule or Dynamic Schedule	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Electronic Access Control or Monitoring Systems	EACMS	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Electronic Access Point	EAP	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Electronic Security Perimeter	ESP	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Element	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Energy Emergency ²	-	Report No. 9	R-32-16A	Adoption	October 1, 2016
Energy Emergency	-	Report No. 11	R-33-18	Retirement	October 1, 2018
External Routable Connectivity	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Frequency Bias Setting	-	Report No. 8	R-38-15	Adoption	Align with earliest effective date of BAL-003-1 standard where this term is referenced
Frequency Response Measure	FRM	Report No. 8	R-38-15	Adoption	Align with earliest effective date of BAL-003-1 standard where this term is referenced
Frequency Response Obligation	FRO	Report No. 8	R-38-15	Adoption	Align with earliest effective date of BAL-003-1 standard where this term is referenced
Frequency Response Sharing Group	FRSG	Report No. 8	R-38-15	Adoption	Align with earliest effective date of BAL-003-1 standard where this term is referenced
Generator Operator	GOP	Report No. 10	R-39-17	Adoption	October 1, 2017
Generator Owner	GO	Report No. 10	R-39-17	Adoption	October 1, 2017

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Geomagnetic Disturbance Vulnerability Assessment or GMD Vulnerability Assessment	GMD	Report No. 10	R-39-17	Adoption	To be determined ³
Interactive Remote Access	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Interchange Authority	IA	Report No. 10	R-39-17	Adoption	October 1, 2017
Interchange Meter Error (IME)	-	Report No. 11	R-33-18	Adoption	October 1, 2019
Interconnected Operations Service	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Interconnection	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Interconnection Reliability Operating Limit	IROL	Report No. 6	R-41-13	Adoption	December 12, 2013
Intermediate Balancing Authority	-	Report No. 8	R-38-15	Adoption	October 1, 2015

³ The NERC Glossary term is associated with reliability standard that is dependent on the Planning Authority/Planning Coordinator function. The BCUC Reasons for Decision for Order No. R-41-13 (page 20), indicated that a separate process would be established to consider this matter as it pertains to B.C.

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Intermediate System	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Interpersonal Communication	-	Report No. 9	R-32-16A	Adoption	October 1, 2017
Load-Serving Entity	LSE	Report No. 10	R-39-17	Adoption	October 1, 2017
Long-Term Transmission Planning Horizon	-	TPL-001-4	R-27-18A	Adoption	July 1, 2019
Minimum Vegetation Clearance Distance	MVCD	Report No. 7	R-32-14	Adoption	August 1, 2015
Misoperation	-	Report No. 9	R-32-16A	Adoption	October 1, 2017
Most Severe Single Contingency ¹	MSSC	Report No. 10	R-39-17	Adoption	January 1, 2018
Native Balancing Authority	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Non-Consequential Load Loss	-	TPL-001-4	R-27-18A	Adoption	July 1, 2019
Non-Spinning Reserve	-	Report No. 11	R-33-18	Retirement	October 1, 2018
Operating Instruction	-	Report No. 9	R-32-16A	Adoption	April 1, 2017
Operational Planning Analysis ²	-	Report No. 6	R-41-13	Adoption	December 12, 2013
Operational Planning Analysis ²	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Operational Planning Analysis ²	-	Report No. 9	R-32-16A	Adoption	October 1, 2016

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Operational Planning Analysis	OPA	Report No. 12	R-21-19	Adoption	October 1, 2021
Operations Support Personnel	-	Report No. 8	R-38-15	Adoption	Align with effective date of Requirement 5 of the PER-005-2 standard where this term is referenced
Physical Access Control Systems	PACS	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Physical Security Perimeter	PSP	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Planning Assessment	-	TPL-001-4	R-27-18A	Adoption	July 1, 2019
Planning Authority	PA	Report No. 10	R-39-17	Adoption	October 1, 2017
Point of Receipt	POR	Report No. 10	R-39-17	Adoption	October 1, 2017
Pre-Reporting Contingency Event ACE Value ¹	-	Report No. 10	R-39-17	Adoption	January 1, 2018
Protected Cyber Assets ²	PCA	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Protected Cyber Assets	PCA	Report No. 10	R-39-17	Adoption	October 1, 2018
Protection System	-	Report No. 6	R-41-13	Adoption	January 1, 2015 for each entity to modify its protection system maintenance and testing program to reflect the new definition (to coincide with recommended effective date of PRC-005-1b) and until the end of the first complete maintenance and testing cycle to implement any additional maintenance and testing for battery chargers as required by that entity's program.
Protection System Coordination Study	-	Report No. 12	R-21-19	Adoption	October 1, 2021
Protection System Maintenance Program	PSMP	Report No. 8	R-38-15	Adoption	Align with effective date of Requirement 1 of the PRC-005-2 standard where this term is referenced
Protection System Maintenance Program (PRC-005-6)	PSMP	Report No. 10	R-39-17	Adoption	October 1, 2019
Pseudo-Tie ²	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Pseudo-Tie	-	Report No. 11	R-33-18	Adoption	January 1, 2019
Qualified Controllable Device (WECC Regional Term)	-	Report No. 13	R-19-20	Retirement	December 31, 2020
Qualified Path (WECC Regional Term)	-	Report No. 13	R-19-20	Adoption	January 1, 2021
Qualified Transfer Path (WECC Regional Term)	-	Report No. 13	R-19-20	Retirement	December 31, 2020

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Qualified Transfer Path Curtailment Event (WECC Regional Term)	-	Report No. 13	R-19-20	Retirement	December 31, 2020
Reactive Power	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Real Power	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Real-time Assessment ²	-	Report No. 6	R-41-13	Adoption	January 1, 2014
Real-time Assessment ²	-	Report No. 9	R-32-16A	Adoption	October 1, 2016
Real-time Assessment	RTA	Report No. 12	R-21-19	Adoption	October 1, 2021
Reliability Adjustment Arranged Interchange	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Reliability Coordinator	RC	Report No. 10	R-39-17	Adoption	October 1, 2017
Reliability Directive	-	Report No. 9	R-32-16A	Retirement	July 18, 2016
Reliability Standard ²	-	Report No. 8	R-32-14	Adoption	October 1, 2015
Reliability Standard	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Reliable Operation ²	-	Report No. 8	R-32-14	Adoption	October 1, 2015
Reliable Operation	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Relief Requirement (WECC Regional Term)	-	Report No. 8	R-38-15	Adoption	Align with effective date of IRO-006-WECC-2 standard where this term is referenced
Relief Requirement (WECC Regional Term)	-	Report No. 13	R-19-20	Retirement	December 31, 2020
Remedial Action Scheme ²	RAS	Report No. 1	G-67-09	Adoption	June 4, 2009
Remedial Action Scheme	RAS	Report No. 9		-	To be determined ³

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Removable Media ²	-	Report No. 10	R-39-17	Adoption	October 1, 2018
Removable Media	-	Report No. 12	R-21-19	Adoption	October 1, 2019
Reporting ACE	-	Report No. 11	R-33-18	Adoption	October 1, 2019
Reportable Balancing Contingency Event ¹	-	Report No. 10	R-39-17	Adoption	January 1, 2018
Reportable Cyber Security Incident	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) where this term is referenced.
Reportable Cyber Security Incident	-	Report No. 13	R-19-20	Adoption	April 1, 2023
Request for Interchange	RFI	Report No. 8	R-38-15	Adoption	October 1, 2015
Reserve Sharing Group	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Reserve Sharing Group Reporting ACE ¹	-	Report No. 10	R-39-17	Adoption	January 1, 2018
Resource Planner	RP	Report No. 10	R-39-17	Adoption	October 1, 2017
Scheduled Net Interchange (NIs)	-	Report No. 11	R-33-18	Adoption	October 1, 2019
Sink Balancing Authority	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Source Balancing Authority	-	Report No. 8	R-38-15	Adoption	October 1, 2015
Special Protection System (Remedial Action Scheme) ²	SPS	Report No. 1	G-67-09	Adoption	June 4, 2009

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Special Protection System (Remedial Action Scheme)	SPS	Report No. 10	R-39-17	Adoption	Held in abeyance due to PC dependencies
Spinning Reserve	-	Report No. 11	R-33-18	Retirement	October 1, 2018
System Operating Limit	-	Report No. 10	R-39-17	Adoption	October 1, 2017
System Operator	-	Report No. 8	R-38-15	Adoption	Align with effective date of CIP Version 5 standards (CIP-002-5.1, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, and CIP-011-1) as reference is made to the term Control Center as part of the definition of System Operator. The term Control Center is in turn referenced from the CIP Version 5 standards.
Total Internal Demand	-	Report No. 9	R-32-16A	Adoption	October 1, 2016
Transient Cyber Asset ²	-	Report No. 10	R-39-17	Adoption	October 1, 2018
Transient Cyber Asset	TCA	Report No. 12	R-21-19	Adoption	October 1, 2019
Transmission Customer	-	Report No. 10	R-39-17	Adoption	October 1, 2017
Transfer Distribution Factor (WECC Regional Term)	TDF	Report No. 13	R-19-20	Retirement	December 31, 2020
Transmission Operator	TOP	Report No. 10	R-39-17	Adoption	October 1, 2017
Transmission Owner	TO	Report No. 10	R-39-17	Adoption	October 1, 2017
Transmission Planner	TP	Report No. 10	R-39-17	Adoption	October 1, 2017
Transmission Service Provider	TSP	Report No. 10	R-39-17	Adoption	October 1, 2017

NERC Glossary Term	Acronym	Assessment Report Number	BCUC Order Number	BCUC Adoption or Retirement	Effective Date
Under Voltage Load Shedding Program	-	Report No. 9		-	To be determined ³
Right-of-Way	ROW	Report No. 7	R-32-14	Adoption	August 1, 2015
TLR (Transmission Loading Relief) Log	-	Report No. 7	R-32-14	Adoption	August 1, 2014
Vegetation Inspection	-	Report No. 7	R-32-14	Adoption	August 1, 2015

Table 2 NERC Glossary Adoption History in B.C.

NERC Glossary of Terms Version Date	Assessment Report Number	BCUC Order Adoption Date	BCUC Order Adopting	Effective Date
February 12, 2008	Report No. 1	June 4, 2009	G-67-09	<ol style="list-style-type: none"> 1. The NERC Glossaries listed became effective as of the date of the respective BCUC Orders adopting them. See the exception of the BAL-001-2 Glossary Terms within the NERC Glossary dated December 7, 2015.¹ 2. Specific effective dates of new and revised NERC Glossary terms adopted in a BCUC Order appear in attachments to the Order. Each Glossary term to be superseded by a revised Glossary term adopted in the Order shall remain in effect until the effective date of the Glossary term superseding it. 3. NERC Glossary terms which have not been approved by FERC are of no force or effect in B.C. 4. Any NERC Glossary terms that have been remanded or retired by NERC are of no force or effect in B.C., with the exception of those remanded or retired NERC Glossary terms which have not yet been retired in B.C. 5. The Electric Reliability Council of Texas, Northeast Power Coordinating Council and Reliability First regional definitions listed at the end of the NERC Glossary of Terms are of no force or effect in B.C.
April 20, 2010	Report No. 2	November 10, 2010	G-167-10	
August 4, 2011	Report No. 3	September 1, 2011	G-162-11 replacing G-151-11	
December 13, 2011	Report No. 5	January 15, 2013	R-1-13	
December 5, 2012	Report No. 6	December 12, 2013	R-41-13	
January 2, 2014	Report No. 7	July 17, 2014	R-32-14	
October 1, 2014	Report No. 8	July 24, 2015	R-38-15	
December 7, 2015	BAL-001-2	April 21, 2016	R-14-16	
December 7, 2015	Report No. 9 ²	July 18, 2016	R-32-16A	
November 28, 2016	Report No. 10	July 26, 2017	R-39-17	
November 28, 2016	TPL-001-4	June 28, 2018	R-27-18A	
October 6, 2017	Report No. 11	October 1, 2018	R-33-18	
July 3, 2018	Report No. 12	September 26, 2019	R-21-19	
August 12, 2019	Report No. 13	September 8, 2020	R-19-20	
October 8, 2020	Report No. 14			