

A. Introduction

1. **Title:** Facility Interconnection Studies
2. **Number:** FAC-002-4
3. **Purpose:** To study the impact of interconnecting new or changed 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 for Project 2020-05.~~

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) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 1.1.** The reliability impact of the new interconnection, or existing interconnection seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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 existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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 existing interconnections of transmission Facilities or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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 existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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.
- R6.** Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*
- M6.** Each Planning Coordinator shall have evidence that it has maintained a publicly available definition of qualified change.

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 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 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.

Violation Severity Levels

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) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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) existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.
R2.	Long-term Planning	Medium	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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 existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, 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).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission 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 existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 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.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R6.	Long-term Planning	Lower	N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

D. Regional Variances

None.

E. Associated Documents

None.

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
4	TBD	Adopted by NERC Board of Trustees.	Revisions under Project 2020-05