

BC HYDRO

T&D SYSTEM OPERATIONS

SYSTEM OPERATING ORDER 1T-22

OUTAGE SCHEDULING AND CO-ORDINATION

Supersedes SOO 1T-22 issued 09 June 2021

Effective Date: 14 June 2021

Review Year: 2025

APPROVED BY: Original signed by:
Bob Cielen
Operations Planning Manager,
T&D System Operations

Denotes Revision

||

1.0 **GENERAL**

This System Operating Order (SOO) outlines the responsibilities, requirements and general procedures to schedule safety protection guarantees and permission for work involving system risk, on transmission and substation equipment, distribution feeder outages, telecom network equipment outages, and protection/telecontrol (including telemetry) outages. These outages are reviewed and coordinated across the BC Hydro Network to meet requirements for Safety, Reliability, and Economic Efficiency.

This SOO also outlines requirements for inter-utility coordination and Reliability Coordinator notification that are mandatory for the scheduling of outages on the BC Hydro network.

An Outage Request is the mechanism for scheduling and coordinating work on the Power System.

Two types of approvals for Outage Request are defined as:

Planning Approval – the advance approval for outage requests, indicating that the outage request is approved for the scheduled dates/times, major equipment, and expected outage zone. This is effectively a guarantee, subject to forced outages or major changes in operations, that the request will receive operations approval for the outage. This supports the requestor for continuing their preparations for the planned outage as scheduled. This approval is normally indicated on the outage request with a flag “Posted to Plan” that is provided by T&D System Operations (TDSO) Operations Planners.

Operations Approval – this is the approval of the request for use by Real Time Operations (RTO) Operators or Telecom Network (TNO) Controllers indicating the outage request is ready for their use (implementation) for the Scheduled dates/times, safety zones, permits, and operating plans contained in the outage request. This is normally indicated by a status for the Outage Request (Approved or Confirmed status).

The scheduling procedures in this order are the minimum requirements for scheduling and coordinating outages. Greater (advance) notice for work scheduling will enhance the procedure.

References:

- SOO 1T-02 “T&D Job Lifecycle Safety System – Overview” and subordinate orders.
- SOO 1T-54C “CROW Outage Scheduling Tool” for reference, and as a companion document to this order.
- SOO 1J-11 “Power System Operation – Authority and Responsibility” for information on Operating Levels for equipment and circuits.
- SOO 7T-12 “Reliability Must Run Generation Requirements” for circuit and equipment that may constrain generation resources.

2.0 **RESPONSIBILITIES**

- Scheduling of Outage Requests is facilitated by the Control Room Operating Window (CROW) software application (see SOO 1T-54C). All requests for planned outages must be presented in a CROW Outage Request form (ORF).
- All planned work on Generation, Transmission or Substation equipment must be scheduled and approved by TDSO prior to commencement.
- All planned work on the Microwave System, including Microwave Radio, Fibre Optic, Multiplex and Ancillary Equipment, must be scheduled and approved by Telecom Network Operations (TNO) prior to commencement.

- All planned work on Generation equipment (Plants, Units, NPRFs) must be scheduled and approved by GSO prior to commencement.

The person responsible for performing the work (or delegate) must prepare an Outage Request in CROW that includes:

- Entering the equipment, circuits, Protection Equipment, RAS Equipment, or Protection Systems that are affected, impacted, or worked on.
- Entering the outage dates/times to meet the timelines defined in this order.
- Entering required Isolation Points for the equipment to be worked on must be entered using an Operating One Line Diagram. Non-standard isolation points must be listed in the Outage Request, in the additional Isolation Points section.
- For Protection Equipment, RAS Equipment or Protection Systems, the requested equipment must be entered using Protection Information Sheets to identify the correct equipment or system that is affected, impacted, or worked on.
- Entering the Work Order number for switching to capture costs for any different crew than the one submitting the Outage Request.
- Enter permit/tag requests for the persons who will be performing the work requiring permit or SPG, or for performing or leading the work where no permit is required.
- Saving the Outage Request to “Submitted” status. Outage Requests that are not in submitted status will not be processed and approved for use by the RTO Operators or TNO Network Controllers. While other persons may contribute to the drafting of the request, the person responsible for the work must change the Outage Request status to “Submitted” to confirm the Outage Request is ready for TDSO final assessment.

Note:

- TDSO **will not approve** any outage request requiring a Clearance or Test & Work safety protection guarantee (SPG) without the required isolation points.
- Outage Schedulers **will not change** isolation points on “submitted” status outage requests without discussing with the outage requestor.

Crew leaders, lines or stations outage planners or managers are responsible for monitoring CROW Web on a daily basis for approval and switching notifications, and subscribing to CROW reports or notifications. Outage Requests should include approval notifications and switching notifications where arranged in advance. These notifications will ensure work requirements (for example, switching) involving other crews will be implemented as scheduled.

In cases where CROW Web access is not available, scheduling arrangements should be made directly with the TDSO (Outage Schedulers or Operations Planning Engineers). Contractors should seek access and enter their requests into CROW. If a Contractor does not have access but makes a request through a BC Hydro party, the Contractor is still the requestor and remains responsible for the outage request contents and submission.

The telephone and electronic mail will be used in the scheduling process to enhance the information entered in the Outage Requests, and to discuss operational concerns with TDSO Operations Planning Engineers and Outage Schedulers. Email and FAX machines will be used, where available, to send marked-up copies of one-line diagrams, switching procedures, and special operating information.

RTO Operators are responsible for implementing outage requests in real time and revising for delays in the expected return times should it not be possible to return equipment to service as planned. RTO Operators are also responsible for creating forced outage requests to aid their own planning and preparation for safety and reliability purposes, and to aid in the coordination efforts for Schedulers and Operations Planners.

3.0 ANNUAL OUTAGE PLANNING PROCESS

The purpose of the Annual Outage Plan (AOP) is to coordinate outages and prioritize outage requests for approval processing. While there is a major uptake of new outage requirements each fall, the uptake of outages continues throughout the year for new requirements, and for changes to the existing plans. These requests will be marked as “Posted to Plan” (Planning Approval) and be prioritized over later submissions. Outage Requests in the AOP can be treated as conditionally approved for the purpose of the requestor’s planning. These requests remain subject to cancellation or re-scheduling due to forced outages, and changes in system constraints that can occur. Please note that a CROW Outage Request is only set to the status of “Approved” (Operational Approval) for the Control Room Operators’ use for preparing and implementing the request (see Section 8.0).

Annual work plans that includes outage requests for maintenance, capital and project work for major system assets and systems (Level I to IV) will be transmitted to TDSO Operations Planning and Outage Scheduling by Generation, Stations and Transmission Engineering, Field Operations, and Project Managers and Program Managers in the fall prior to the fiscal year in which the work is to be done. The process and requirements are documented in Appendix 2. A reminder email request from TDSO for these outage submissions will be communicated in the fall, identifying the critical asset requirements that are to be included for consideration in the AOP. The form of submission (a formatted excel spreadsheet) is normally attached to the reminder email request. The form of submission normally does not deviate from previous years. The deadline for the AOP submissions to TDSO is October 31st.

Major Distribution outages that impact customers can be included the submission. Further, Appendices 3A to 3D provide recommended time periods for setting request dates for Level III and Level IV transmission and substation equipment. Appendices 4 to 8 provide important details about circuit, equipment, customer and generator impacts for consideration when scheduling outages.

TDSO Operations Planning and Outage Scheduling will prepare an AOP schedule and confer with the work requestors on the draft and issue/post the AOP in mid-January. As the Annual Outage Plan is a process, the requests will be set as “Proposed” status outage request entries in the CROW. These requests are the responsibility of the assigned outage requestor for further update and use. As reliability impacts are identified, and co-ordination opportunities are identified, However, TDSO Operations Planning will revise schedules working with the requestor and revise the proposed outage requests in CROW.

Future years’ outage request requirements can be submitted for consideration and prioritization at any time. These requests must be follow-up with direct communication with the TDSO Operations Planners.

Primary considerations for posting an outage request in the Annual Outage Plan will include:

- the impact on reliability, including direct customer impact (outages, power quality),
- risks to system equipment or customers on next contingency,
- generation resource impact/restriction,
- system transfer capability reductions, and
- impacts to neighbour utilities and the greater Interconnection.

In general, regardless of the level of equipment, if an outage has a customer impact, a resource impact, or poses a System Operating Limit (SOL) restriction, these outages requests are eligible to be assessed for inclusion in the Annual Outage Plan.

Note:

- Transmission outages that can impact markets, generation resources, or have bulk customer impacts are posted on an external website (see Section 10).
- All outages that get included in the Annual Outage Plan can be viewed on the CROW Web outage request browser, indicated by the “Posted to Plan” field (the column can be included on the Web browser using the View Definition feature).
- The “flags” section on the ORF also displays the flag “Posted to Plan” to indicate that the request is now part of the posted Annual Outage Plan.
- All changes to outage request entry dates/times and equipment for requests that are “Posted to Plan” must be discussed between the requestor and Operations Planning prior to the requestor making the changes in the CROW.

4.0 PROCEDURES FOR OUTAGES REQUIRING INTERUTILITY COORDINATION

Outage Requests for transmission circuits/stations equipment that affect the transfer capacity of Path 1 (BC-AB inter-tie) and Path 3 (BC-US inter-tie) require coordination with the respective neighbor operating entities (AESO, Altalink and BPA).

- These outages should be entered in the Annual Outage Plan in the fall prior to the calendar year in which the outage falls.
- These must be submitted in CROW a minimum of 45 days in advance of the Calendar Month in which the start date falls. This requirement is to facilitate the **Mid-Range Scheduled Outage Coordination Process for BPA and for AESO**.
- Transmission circuits/stations equipment that affects the US tie can be found in SOO 7T-18. A simplified listing is noted in Appendix 4.
- Transmission circuit/stations equipment that affects the Alberta tie can be found in SOO 7T-17. A simplified listing is noted in Appendix 4.

Transmission circuits that affect the transfer capacity of the FortisBC ties or restrict any generation in the area require coordination with FortisBC. They should be submitted in CROW a minimum of 14 days in advance.

- Transmission circuits that affect the FortisBC ties or restrict generation in the area are as listed as in SOO 7T-34, Attachments 1 and 2.
- Transmission circuits requiring interutility notification are listed in SOO 7T-16.
- Outage Requests for Generators in the FortisBC service area are covered in Section 6.0 of this order.
- Upon receipt of outage requests from FortisBC for Bulk Electric System (BES) equipment outages, BC Hydro reports these FortisBC equipment outages to the BCRC.

Outage Requests for transmission circuit/stations equipment in BPA, FortisBC and AESO systems affecting the tie lines are typically received by TDSO Operations Planning by email and may be manually entered into BC Hydro CROW; these CROW entries aid TDSO Planners and Schedulers in the identification of windows for performing concurrent/coordinated work.

5.0 BCRC – COORDINATED OUTAGE SCHEDULING

As a Balancing Authority and Transmission Operator BC Hydro TDSO is responsible for posting outages within the jurisdiction that impact the Reliability Coordinator (RC) studies performed by the British Columbia Reliability Coordinator (BCRC), and for BCRC coordination with Neighbouring Reliability Coordinators.

BCRC is responsible for updating the CROW asset registry to indicate the assets required to be reported for their RC assessments and notification, enabling the receipt of outages the TOP/BA submits (in the OO 8T-31 outage coordination process).

These requirements are facilitated using the BC Hydro's CROW Outage Requests. BC Hydro CROW system posts any required CROW Outage Requests to neighbour RC systems. By 10:00 PST, five business days prior to the outage start, for Reliability Coordinator assessment, TDSO Operations Planning posts all planned outages that are expected but have Operations Approval for:

1. transmission circuits and Circuit breakers outages (100kV and above),
2. all Transmission level transformers,
3. all Transmission bus outages,
4. all major reactive and voltage support equipment outages,
5. series capacitors,
6. all RAS Scheme outages, and
7. all single generation unit or plant outages that aggregate to 50 MW or greater of unavailable generation.

All outage requests that match these requirements are posted both internally and externally when approved in CROW, but generally no later than five (5) business days prior to the outage request start date regardless of approval status in CROW, for outage requests flagged as BCRC Reportable.

Outage requests will normally be approved or approved conditionally by 14:00, at least two (2) working days in advance of the outage start date (See Section 8.0 also) This is minimum target for meeting requirements for the BCRC review. Any late approval requires a direct notification of the BCRC Reliability Coordination Engineers (by phone or online messaging), with a detailed explanation (including reason of late approval, urgencies) entered in the TOP-RC comments of the CROW request.

In addition, all sustained Forced Outages or any Operational Outages for the above equipment/circuits that are expected to remain out of service for longer than 30 minutes, using an Outage Event record and an linked Outage Request entered in CROW. An estimated return time (completion time) must be included.

6.0 OUTAGE REQUEST TIMELINES

Outage Requests are required to be in "Submitted" status in CROW to meet the timelines listed in this section but are also subject to the greater of/additional to the requirements that may be listed in Sections 3.0, 4.0 and 5.0 of this Order.

Requests are to be "Submitted" by 10 am no later than the minimum business days in advance specified in the table below and other sections of this Order.

To support the request process, Appendices can be found to aid in identifying equipment that must be included in outage requests. Outage requests should include not only the requested equipment being worked on, but also major Equipment impacted (equipment that must be out of service concurrently)

- Appendix 3 – Level III & IV transmission and substation equipment considerations by region
- Appendix 4 – System Equipment Impacting Interconnection Path Operations
- Appendix 5 – System Equipment Impacting Inter-Area Transfers
- Appendix 6 – Circuits Impacting TVC and Major Distribution Commercial Customers
- Appendix 7 – Circuits that Impact IPP's and TVC's with generation
- Appendix 8 – Circuits that impact BC Hydro Generation

Summary of Submission Timelines:

| <u>Constraint Type OOS or Part Out</u> | | |
|---|----------------------------------|-------------------------------------|
| <u>Equipment Type</u> | <u>Level</u> | <u>Minimum Business Days</u> |
| Transmission & Distribution | All Level I & II | 15 days |
| | Level III Circuits | 10 days |
| | Level IV Circuits | 5 days |
| | Level III & IV Station Equipment | 5 days |
| | Level V ¹ | 5 days |
| RAS | All levels | 15 days |
| Protection Systems | Level I & II | 10 days ³ |
| | Level III & IV | 5 days ³ |
| Distribution ² | All | 5 days |
| Generation and NPRF ⁴ | All | 5 days |
| Telecom Network | All | 5 days |
| SCADA | | 5 days |
| Customer Equipment ⁵ | All | 5 days |

Notes:

1. Level V that impact higher levels of equipment on the one-line (consistent with SOO 1J-11).
2. Downstream distribution that is outside station fence.
3. If there is major equipment that needs to be out for the Protection outage, then the submission timeline takes the more restrictive of the requirements.
4. All BES reportable generation (both BC Hydro and IPP). Note: the outage request will contain an outage flag indicating if it is BCRC Reportable.
5. See Sections 6.5 and 7.0.

| <u>Other Constraint types:</u> | <u>Level</u> | <u>Minimum Business Days</u> |
|---------------------------------------|---------------------|-------------------------------------|
| LLP/ANRP (Grid Permit) | Level I - Barehand | 10 days |
| | Level I | 5 days |
| | Level II, III, IV | 2 days |

6.1 Submission Timelines for Outages on the BC Hydro System

In addition to the submission timelines table above, the following requirements may apply:

- Microwave Radio, Fibre Optic, Multiplex, and Ancillary Equipment Outage Requests are to be submitted to Telecom Network Operations (TNO) at least five (5) working days in advance. Personnel must report into TNO immediately prior to working on above telecom equipment. Less than five (5) days advance notice may be accommodated on a case by case basis.
- For Transmission outages that affect generation capacity, a Reliability Must Run (RMR) requirement must be entered in CROW. The TDSO Operations Planners will coordinate the requirement with BC Hydro Generation System Operations prior to final approval of the outage request. This process is necessary for optimization: minimizing reliability and financial impacts to the system. This

process can increase the time required to secure approval of the request.

- All substation and transmission Outage Requests that will result in a source outage to customers must be approved by the TDSO Management before any outage notification is made.
- If a Safety Protection Guarantee is required (Clearance, or Test and Work) and the planned start time is critical to the crew, then it is mandatory that the outage requester fill in the Permit Start Time and Permit Complete Time in CROW, in addition to the outage start and completion times. This information is critical to ensure that crews are able to obtain their permits on time and to avoid any costly delay.

6.2 Timelines for Transmission LLP/ANRP

Request for Live Line Permits and Assurance of No Reclose Permits to LEVEL I transmission circuits or equipment must be submitted in CROW by 10:00, five (5) working days prior to the planned start date. For Barehand work methods On LEVEL I circuits, the timeline increases to 10 working days prior. "Barehand" should be expressly stated in the request.

Request for Live Line Permits and Assurance of No Reclose Permits to LEVEL II, III and IV transmission circuits or equipment must be submitted in CROW by 10:00 two (2) working days prior to the planned start date. Requests by Field Operations for either Live Line Permits or Outage Requests will be approved based on reliability impacts of outages associated with the work, customer impacts due to planned outages, resource impacts associated with the requests, and cost-effective method of completing the work, given safe worker practices.

- Circuit identification (including description of **electrical location**) must be provided by the requester on the Outage Request. RTO does not have detailed geographic maps of the transmission system and are unable to confirm geographical locations relative to transmission circuits.
- If a distribution feeder or feeders are built under a transmission line and LLP/ANR is required on the transmission line and distribution feeder(s) then LLP/ANR request for transmission line is submitted using outage requests tab in CROW Web and LLP/ANR request for feeders is requested using distribution permits in CROW Web (reference DOO 1D-15).
- When an outage request is submitted for work on a 60 kV or higher voltage transmission line that parallels another 60 kV or higher voltage line(s), the outage requestor must identify if circulating current is a potential hazard (reference SOO 1T-04).
- When work is by barehand methods, for any level of transmission circuit, "Barehand" should be expressly stated in the request.

6.3 Timelines for Generating Units and NPRF Outages

For all generating units that are owned by BC Hydro, owned by an IPP but contracted to BC Hydro, or located in the FortisBC service area, Outages Request must be submitted by BC Hydro GSO into the CROW for approval by TDSO, a minimum of five (5) working days in advance of the planned start date. For clarity, the generating unit outage includes all elements in the radial path to the bus connection point for the generator at stations. Generation outages are to be approved by GSO prior to TDSO approvals being made.

Effective June 19, 2021: All NPRF outages are to be submitted in CROW a minimum of 5 days in advance of the start date.

6.4 Timelines for SCADA Equipment

Operations Planning and Outage Scheduling is responsible for approving work on:

- Supervisory Control and Data Acquisition (SCADA) system, sub-master equipment, associated RTUs and other telemetry systems including all associated hardware, data links to control centres, software and databases.
- Telemetry outages should be entered for the major asset impacted, and other impacts noted in the comments. In addition, the EMS Help Desk must be included in the approval notifications section, and consultations undertaken as early as possible (to address potential inter-utility impacts and EMS application performance)
- These outages must be submitted a minimum of five (5) working days in advance of the outage start date.

6.5 Timelines for LEVEL IV Customer Equipment

Any outage that involves an interruption or will significantly affect LEVEL IV customer owned equipment (those customers that have 3T operating orders) must be scheduled in CROW a minimum of five (5) working days in advance of the planned start date.

The TDSO Outage Scheduler will review the request with the affected customer manager to coordinate switching and confirm the outage or abnormal condition period. The Outage Scheduler will also approve any outage notification to the customer to ensure consistency between the message and the Outage Request.

Annual Outage Planning: To facilitate better coordination with outage (or plant shutdown) with Transmission Voltage Customers (TVCs), BC Hydro Key Accounts will request annual work plans from the TVCs and will provide TDSO Operations Planners and Outage Schedulers with a consolidated Work Plan by end of October for the next annual planning cycle. Customer impacting outages or customer-initiated outages that require BC Hydro equipment OOS will be posted in the annual plan.

7.0 RESPONSIBILITY OF REQUESTOR WHEN MULTIPLE DEPARTMENTS INVOLVED

Except for longer times specified in previous sections, all outage requests involving two (2) or more departments shall be requested at least ten (10) working days in advance of the planned start date. The requester must coordinate the work with the other departments prior to making the request to Operations Planning.

Coordination of the work planning by the outage requestor is necessary to enable effective utilization of field resources and to maximize equipment availability.

The TDSO Outage Scheduling department is responsible for coordinating crews for switching and isolating.

8.0 OUTAGE REQUEST APPROVAL TIMELINES

Outage requests will normally be approved or approved conditionally by 14:00, at least two (2) working days in advance of the outage start date. This is minimum target for meeting requirements for the final preparation of the Daily Operating Plan (DOP) to enable RTO Operators' review of the operating plan requirements, and for BCRC review.

- "Approval" status in CROW means the request is ready for the Operators' review and job preparation.
- For greater certainty in worker or crew planning, outage requests that are in the Annual

Outage Plan are treated as if conditionally approved, **regardless** of CROW status, but are subject to real time changes (due to forced outages, etc.) that may result in cancellation.

Where outages impact generation or a path limit, TDSO Operations Planning and Outage Scheduling will advance or increase the time requirements, to ensure proper notifications occur.

Where outage requests have been received earlier, best effort will be made to approve further in advance.

Outages in the Annual Outage Plan (AOP) will be given the highest priority for Approval, and the highest priority when resolving scheduling conflicts.

Because of the changes in real time topology, outage requests may not be implemented in real time, due to forced outages and system emergencies, load and generation patterns. In such cases, best effort will be made to reschedule a request as soon as possible. An approved outage request is not a guarantee; however, it is a priority in the operating plan.

Outage Requests will be evaluated to ensure all equipment will remain within System Operating Limits (SOL), in accordance with 8T-30 "System Operating Limits Methodology for The Operations Horizon", as applicable, prior to approval. Operating Plans will be created for outage requests to mitigate exceedances of SOL. Any outage request that cannot be resolved to keep within SOL will not be approved.

9.0 EMERGENCY WORK SCHEDULING

Scheduling requirements will be waived to accommodate emergency work. Emergency outage arrangements should be made directly with the TDSO System Control Manager or their delegates by telephone (time permitting) or to the appropriate on-duty Operator via telephone or radio. A late outage request does not constitute an emergency.

10.0 BC HYDRO TRANSMISSION WEBSITE POSTING

TDSO publishes some outage requests to bchydro.com to support Wholesale Transmission Services. The purpose is to ensure that outage requests which are normally Non-Public Transmission Information (NPTI) are made to satisfy Standards of Conduct (SOC) requirements - allowing for inquiries and discussions with Wholesale Transmission Services market participants. The published information is limited to equipment, reasons for outage, dates/times and high level impacts, and limited revision details. These postings support the Open Access Same Time Information System (OASIS) needs and requirements for Wholesale Transmission Services markets.

Planned Outages for transmission circuits and transmission station equipment, that are Approved and will start in the within the next 14 days, are posted to the BC Hydro Transmission web site. Once an outage is in progress, and entry is made in the Current Outages section on the site. Estimated return times for all planned and forced outages are posted when available. Upon the completion of a planned or forced outage, the entry is moved to a table of Completed Outages in the past 24 hours.

These outage listings can be found at: <https://www.bchydro.com/energy-in-bc/operations/transmission/transmission-system/transmission-outages/planned-trans-outages.html>

Outage Requests that are under review for inclusion the Annual Outage Plan or “Posted to Plan” will be published on bchydro.com as OASIS support when the outage:

- has transfer capability limitations on the BC-US or BC-AB interconnections,
- has significant Transmission Voltage Customer or Distribution customer impact,
- has Generation resource impacts

This posting is an excel document containing outages for the current calendar year to 5 years out, and can be found at:

<https://www.bchydro.com/energy-in-bc/operations/transmission/transmission-system/transmission-outages.html>

11.0 REVISION HISTORY

| Revised by | Revision Date | Summary of Revision |
|-------------|-------------------|---|
| SJC/MDW/KFF | 12 June 2020 | Section 1.0 clarified Planning approval granted by TDSO Ops Planners Section 3.0 – added statement on TDSO providing the posting flag. Section 4.0 – removed NWPP term and revised name of the BPA process to “mid term”. Section 6.0 – table for OOS/Part Out reformatted. Section 6.1 – notes for Distribution timelines. Revised labels for section 6.2 – 6.5 titles, and . groups/team labels in subsections. Section 6.1 revised for clarity of equipment requirements including distribution (outside the fence) timelines. Appendix 6 – updated customer/facility names; added 45+ TVCs. Appendix 7 – added “Circuits That Impact IPPs and TVCs with Generation”. Appendix 8 – added “Circuits That Impact BC Hydro Generation”. Revised group labels and corrected acronyms throughout the document. |
| RAC/PCC | 16 September 2020 | correct typos and formatting issues with tables Section 3 – revised to reference Appendix 2 and clarify the form of submission for the annual plan update. Revised for reminder notification for the AOP submission Section 4 – added Altalink to the coordinating entities Section 6 – revised to correct section references for timelines, revised to add reference for Appendices 7 and 8. Section 10 - revised to include the bchydro.com posting of outages from AOP process, that impact Wholesale Transmission Services. Clarification of the two bchydro.com posts and links updated. |
| Bob Cielen | 12 November 2020 | Section 3 Typo corrections Appendix 1 Contacts updated Appendix 7 – reordered, moving D circuits to the top of the table. |

| | | |
|----------------------------|--------------|--|
| Bob Cielen | 09 June 2021 | <p>Section 2 - revised for Protection Equipment, RAS Equipment and Protection Systems. Section 5 - is revised for clarity on the BCRC submission and approval timeline requirements. Section 6 - revised for minor clarification on CROW status. Added NPRF to table of timeline requirements. Section 6.3 revised to include NPRF outages. Section 8 – added AOP priority and SOL requirements to the approval timeline considerations. Removed CM References.</p> |
| Bob Cielen / Steven Cullen | 14 June 2021 | <p>Section 2.0 - revised to remove CM reference, and replaced with all generation outages to be approved by GSO. Section 5.0 - revised with BCRC is responsible for identifying the assets it requires for outage notifications - revised for inclusion of Operational outages notifications within 30 min (previously assumed and considered as forced outages) Appendix 1 - revised to add emails boxes for Outage Scheduling and Operations Planning teams. Appendix 6 - removed AGP Ripet Sub ; which is covered by RTI TVC One-line and OO.</p> |

APPENDIX 1 – CONTACTS

Note: desk numbers have been forwarded to cell phones as part of the pandemic response actions.

Operations Planning

The group email address for all BES Operations Planning inquiries (for outages and related matters) is:

- outage.scheduling@bchydro.com

Note: use of this email address forwards to Operations Planners and the Outage Scheduler group email address below.

| System Scheduling | Telus | PAX |
|---|--------------|------------|
| Vancouver Island / Lower Mainland / Path 3 (US Interconnection) | 604.455.1956 | 41956 |
| Northern Interior / Central Interior / South Coast / North Shore / Bridge River | 604.455.1957 | 41957 |
| Southern Interior / Path 1 (AB Interconnection) | 604.455.1958 | 41958 |
| TVC / IPP | 604.455.1959 | 41959 |

Note: The above numbers are only monitored between 08:00 and 16:00 on work days.

| | | |
|---|--------------|-------|
| Bob Cielen (Manager) | 604.455.1763 | 41763 |
| Lili Bu (Planning Lead and AOP Coordinator) | 604.455.1843 | 41843 |
| Steven Cullen | 604.455.1764 | 41764 |
| Yan Ling Cong | 604.455.1775 | 41775 |
| Kelvin Foo | 604.455.1952 | 41952 |
| Amy Lam | 604.455.1754 | 41754 |
| Jan Laursen | 604.455.1954 | 41954 |

Outage Schedulers

The group email address for all Outage Scheduler contacts for related matters is:

- dlfvoout@bchydro.com

| Area Scheduling | Scheduler | Telus | PAX |
|--|------------------|--------------|------------|
| Barry Krahn (Manager) | | 604.455.1949 | 41949 |
| Outage Scheduler Grid 1A (Northern Interior) | Lorraine Crist | 604.455.1947 | 41947 |
| Outage Scheduler Grid 1B (Central Interior) | Lawrence Ryan | 604.455.1948 | 41948 |
| Outage Scheduler Grid 1C (Southern Interior) | Lawrence Ryan | 604.455.1946 | 41946 |
| Outage Scheduler Grid 2A (Vancouver Island) | Bill Lowe | 604.455.1944 | 41944 |
| Outage Scheduler Grid 2B (North Shore Coastal) | Bill Lowe | 604.455.1945 | 41945 |
| Outage Scheduler Grid 3A (Metro/Lower Mainland) | Keith Buccini | 604.455.1941 | 41941 |
| Outage Scheduler Grid 3B (Fraser Valley) | Keith Buccini | 604.455.1943 | 41943 |
| Outage Scheduler Load 1-4 (Outside Lower Mainland) | Roger Lamothe | 604.455.1940 | 41940 |
| Outage Scheduler Load 5-10 (Lower Mainland) | Shea Talbot | 604.455.1942 | 41942 |
| Outage Scheduling Fax | | 604.455.1757 | 41757 |

APPENDIX 2 – TDSO ANNUAL PLANNING PROCESS OUTLINE

Long & Mid Term Planning

In the fall of the current fiscal year (Q3 FY), outages required for the next 1 to 10+ fiscal years (FY+1 through FY+10) are identified and communicated to TDSO according to the following requirements:

| | 6-10+ years ahead | 3-5 years ahead | 1-2 years ahead | Notes |
|------------------------------------|--|---|---|---|
| Type of outages to identify | <p>Currently no formal request from TDSO to identify outages in this timeframe.</p> <p>Any outage entries are based on Project or Program requests for certainty or securing outage placeholders in AOP.</p> | <p>Currently no formal request from TDSO to identify outages in this timeframe.</p> <p>Any outage entries are based on Project or Program requests for certainty or securing outage placeholders in AOP.</p> <p>Beginning in F21, TDSO will request the following:</p> <p>All outages impacting:</p> <ul style="list-style-type: none"> All 500 kV lines All 500 kV Buses Synchronous condenser outages with duration greater than 5 days. Shunt Reactive & Capacitive Equipment affecting interties (SOO 7T-18) | <p>Any equipment or circuit work that will result in outages to the following Transmission (BES) equipment:</p> <ul style="list-style-type: none"> All Transmission Circuits (138 kV and above), Transmission Transformers (secondary is 138 kV and above), Phase-shifting Transformers, Transmission Buses (138 kV and above), Synchronous Condensers, Circuit Breakers (138 kV and above), Shunt Reactive and Capacitive Equipment (35 MVAR and greater), Series Capacitors, AutoVar Schemes, Braking Resistors, Remedial Action Schemes (RAS) (requiring primary or standby outages), RTU outages (that impact RAS operations, telemetry or AGC operation). <p>Outage requirements for 60 kV (and above) circuits and station equipment that will:</p> <ul style="list-style-type: none"> Restrict or limit the operation for BC Hydro’s Generation or IPP generation, Cause direct outages to Distribution Customers or Transmission Voltage Customers. | <ol style="list-style-type: none"> Outage identification is done on a rolling window basis with major uptake once per year during the fall Annual Planning Process. Outage requirements do not have to be firm in order to be identified and communicated to TDSO (especially in the 2 to 10+ year timeframes). For system planning purposes, it is useful to know that some type of outage or restriction may be required even if the requirements may change. TDSO’s premise is that it is better to add requests in the likely plan and to later remove requests, than to add them late to the process. Placeholder future years outages to support generation impact assessment and coordination, and transfer capability assessments. If there is uncertainty in the required outage timing or equipment impacted, this should be communicated to TDSO. The outage requestor should update TDSO on this uncertainty as more information becomes known. For outages that may have significant system impacts, TDSO may request additional information on the flexibility available to move or modify the outage (e.g. time/cost to recall, defer, advance, shorten the outage). The selection of placeholder outages is an iterative assessment taking in to account each new outage request and considering: <ol style="list-style-type: none"> Coordination with GSO, including: <ol style="list-style-type: none"> Generation priorities (preferred outage windows) Generation availability for RMR Historical heavy import/export periods Historical and forecast demand (domestic and market), including: <ol style="list-style-type: none"> Times of the year - Distribution customer risk is minimized Customer risk (load, regulatory, environmental, economic, social) Historical forced outages periods (i.e. lightning periods) Coordination with 3rd parties (IPPS, TVCs, D commercial), including: <ol style="list-style-type: none"> scheduled on 6 months lead, relevant BCH work is then re-assessed and posted to plan. Path impacts based on SOO 7T-17 and SOO 7T-18 assessments: includes all reactive outages, prescribed lines, and BSY capabilities. Isolation zones may be required to review and identify conflicts. Power flow, TSA-PM, VSAT, and Contingency analysis performed (uses forecast generation, load and transfers) to confirm system performance. Avoid multiple overlapping outages that cannot be easily resolved for MRS criterion (Operating Limits (SOL) exceedance, RAS conflicts, insufficient RAS response, potential for cascading outages or uncontrolled separation). Neighbour utility equipment outages and system conditions Field crew resources / availability Priority of major capital project and in-service date requirements Duration uncertainties Flexibilities (recall /cancellation, timing delays, cost to exercise flexibility). |
| Timeframe | Within fiscal years FY+6 through FY+10 | Within fiscal years FY +3 through FY +5 | Within Fiscal Years FY+1 through FY+2 | |
| Deadline | 31 October (of current year) | | | |
| Point of Contact | TDSO Operations Planners (See Operations Planning contacts in Appendix 1) | | | |
| Send outages to TDSO by: | Email populated AOP Input sheet (MS Excel sheet provided in Annual Outage Request email) to TDSO Operations Planner | | | |
| Reference | System Operating Order 1T-22 “Outage Scheduling and Coordination”; TDSO Annual Outage Request e-mails (sent Sept/Oct from TDSO Operations Planning) | | | |

In-Year Changes to Plans

Any new or changing outages identified outside the fall Annual Planning Process are to be identified and communicated to TDSO according to the following requirements:

| | 1-4 years ahead | Within the Current Fiscal Year > 45 days ahead of calendar month | Within the Current Fiscal Year 45 – 7 days ahead | Within the Current Fiscal Year 7 days ahead to same day |
|--|---|--|--|--|
| Type of outages to identify | New outages to the Annual Planning Process or changes to existing outages in the Annual Planning Process. | New outages and changes to: <ul style="list-style-type: none"> Any outage impacting intertie capabilities Any outage near boundaries that can impact neighbour system (adjacent stations or creates radial line sources) All outage request not specifically identified in Annual Planning Process Any entries are based on Project / program requests for certainty or securing placeholders in AOP | The following types of outages must be put into “submitted” status in CROW in accordance to SOO 1T-22 timelines: <ul style="list-style-type: none"> All outages marked in Annual Outage Plan All <i>new</i> ad-hoc outages All generation outages RAS and PN outage work that cause equipment outages or restrictions All outages that must be submitted to Reliability Coordinator or EIM process TVC/IPP outages must be confirmed still in plan and the following are required: <ul style="list-style-type: none"> Outage Notifications to TVC/IPPs Outage Notifications to Distribution customers | Emergency outages Opportunistic outages <ul style="list-style-type: none"> Changes to work plan (alternatives for cancelled work) Outage that are responses to Forced outages Distribution outages outside the fence No new outages impacting TVC/IPP/Distribution customers within 5 days. |
| Timeframe | Next 1 to 4 fiscal years | Within current fiscal year (Apr-Mar) | | |
| Deadline | ASAP | ASAP | ASAP | ASAP |
| Send outages/ changes to TDSO by: | Email TDSO Operations Planner | Call TDSO Operations Planner and enter in CROW | Call TDSO Operations Planner and TDSO Outage Scheduler and enter in CROW | Call TDSO Operations Planner and TDSO Outage Scheduler and enter in CROW Call Real-time desk (same day and outside working hours only) |
| Point of Contact | TDSO Operations Planning (See Operations Planning contacts in SOO 1T-22 Appendix 1) | | | |
| Reference | TDSO Annual Outage Request e-mails | System Operating Orders 1T-22 and 7T-12 | | |

**APPENDIX 3 – LEVEL III AND LEVEL IV TRANSMISSION AND
SUBSTATION EQUIPMENT CONSIDERATIONS**

APPENDIX 3A - LOWER MAINLAND EQUIPMENT (Special Scheduling Considerations)

TRANSMISSION

| | |
|-----------|---|
| 60L10 | Co-ordinate with BBH islanding operation. |
| 60L13 | Co-ordinate with ALU generation and SLK shutdown. |
| 60L17 | Co-ordinate with GSP and NRG shutdown. |
| 60L31 | Co-ordinate with TII and DVM shutdown. |
| 60L32 | Co-ordinate with WCF shutdown. |
| 60L39 | Co-ordinate with BMP shutdown. |
| 60L41 | Co-ordinate with RSR shutdown. |
| 60L42 | Co-ordinate with LF1 shutdown. |
| 60L58 | Co-ordinate with DPT, WTL shutdown. |
| 60L59 | Co-ordinate with CAN, LNH, BCI, TLB shutdown. |
| 60L62 | Co-ordinate with SWP and JRI shutdown. |
| 60L63 | Co-ordinate with VDK shutdown. |
| 60L66 | Co-ordinate with CPS shutdown. |
| 60L67 | Co-ordinate with SCP shutdown. |
| 60L69 | Co-ordinate with PTO, FRC and BTA shutdown. FRI generation. |
| 60L71 | Co-ordinate with SEE generation. |
| 60L80 | Co-ordinate with PKP shutdown. |
| 60L90 | Co-ordinate with ERW and NXC shutdown. |
| 60L91 | Co-ordinate with NXC shutdown. |
| 60L93 | Co-ordinate with WHP shutdown. |
| 60L95 | Co-ordinate with HPS shutdown. |
| 60L98 | Co-ordinate with CTN shutdown |
| 1L31/32 | Co-ordinate with BOX, WFR and MCH generation, preferred outage window April 1st through September 30th for low river running level. |
| 1L33/1L48 | Co-ordinate with POW. |
| 1L44 | Co-ordinate with COM, SCG and BRK generation. |
| 2L1 | Sectionalizing results in customer outage to PEM. Co-ordinate with MCH generation. Every effort must be made to do the work using live line procedures or alternate methods to feed customers. If not possible, outage must be scheduled through the community and minimized to reduce outage time. |
| 2L2 | Co-ordinate with RUT generation. |
| 2L12 | Co-ordinate with CMS and ASL generation. |
| 2L47 | Co-ordinate with HSP generation. |
| 2L48 | Co-ordinate with PSW generation. Coordinate with POW. |
| 2L56 | Preferred outage window March 1 st through October 31 st . 2L56 OOS requires CAM T3 being OOS and this results in a risk of overloading CAM T2. |
| 2L63/2L6 | Co-ordinate with 2L129 operations. Preferred outage window March 15 through October 15. |

STATIONS

| | |
|---------------------------------|---|
| BBR, BTA, SZM, FRC, LBY, PTO | All these are single transformer stations. Every effort must be made to do work using live line procedures or alternate methods to feed customers. If not possible, outage must be scheduled through the community and minimized to reduce outage time. |
| CAM T3 CHK T1/T2 | Preferred outage window March 1 st through October 31 st . Risk of overloading T2. Preferred outage window March 1 st through October 31 st . Risk of overloading the remaining transformer if one is out. |
| ING T2/T4/T5 | Preferred outage window March 1 st through October 31 st . |
| MLN T2/T3 | Preferred outage window March 1 st through October 31 st . Risk of overloading the remaining transformer if one is out. |
| MRG T11/T12/T13 | Preferred outage window March 1 st through October 31 st . Risk of overloading the remained two transformers if one is out. |
| MUR T2 or T6 | Weekend outages only. Downtown reliability concerns. |
| NKL T2/T3 | Preferred outage window March 1 st through October 31 st . Risk of overloading the remaining transformer if one is out. |
| PKL T1/T2 | Preferred outage window March 1 st through October 31 st . Risk of overloading the remaining transformer if one is out. |

REACTIVE

| | |
|-----------|---|
| ANN 12CX2 | Preferred outage window March 1 st through October 31 st . 12CX2 is required to support ANN voltage during winter months. |
|-----------|---|

FEEDERS

| | |
|-----------|---|
| ARN 25F32 | Coordinate with VLG generation. |
| ARN 25F33 | Coordinate with HNL generation. |
| BBR 25F52 | Coordinate with BBH islanding operations. |
| FCN 25F51 | Coordinate with BDW generation. |
| GIB 25F54 | Coordinate with MCH generation. |
| HOP 25F53 | Coordinate with HNC generation. |
| MIS 25F51 | Coordinate with SKW generation. |
| PEM 25F61 | Coordinate with MCP generation. |
| RBW 25F64 | Coordinate with FTZ generation. |
| RBW 25F65 | Coordinate with SOR generation. |

APPENDIX 3B – VANCOUVER ISLAND EQUIPMENT (Special Scheduling Considerations)

TRANSMISSION

| | |
|--|--|
| 1L10, 1L11, 1L14 | Preferred outage window March 1 st through October 31 st . Must coordinate with JOR availability. |
| 1L103, 1L104 | Coordinate with ICG and EFM. |
| 1L115, 1L116 | Preferred outage window March 1 st through October 31 st , coordinate with JOR and 2L129 availability. |
| 1L127 | Coordinated with IPP's on 60L129 and minimize impact on ASH generation. |
| 1L139, 1L140 | Coordinate with CFT generator and or mill scheduled load reduction. |
| 1L142 | Coordinate with ASH generation. |
| 1L146, 1L143 | Coordinate with JOR i.e. is there enough water or the outage will not result in spill. |
| 60L128, 60L129, 1L112, 1L125, 1L130, 1L131, 1L134, 1L137 | Radial fed customers. Every effort must be made to do the work using live line procedures or alternate methods to feed customers. If not possible, outage must be scheduled through the community and minimized to reduce outage time. |
| 2L123, 2L128, 2L125, 2L130 | Preferred outage window March 1 st through October 31 st , coordinate with JOR, 2L129 and VI reactor and Synchronous Condenser availability. |

STATIONS

| | |
|---------------------|--|
| DMR T6, T5 | Preferred outage window March 1 st through October 31 st . |
| GOW T1, T2, T3, T4 | Preferred outage window March 1 st through October 31 st . |
| KGH T4 | Preferred outage window March 1 st through October 31 st . Coordinate with the availability of PHY/PML circuits and portable voltage regulators. |
| SNY T1, T2 | Preferred outage window March 1 st through October 31 st . |
| WOS T1 | Radial fed customers. Every effort must be made to do the work using live line procedures or alternate methods to feed customers. If not possible, outage must be scheduled through the community and minimized to reduce outage time. |
| VIT T5, T6, T9, T10 | Preferred outage window March 1 st through October 31 st . Must coordinate with JOR availability and VIT Synchronous Condenser requirements. |

REACTIVE

| | |
|----------------------|---|
| CLD 25CX2 | Preferred outage window March 1 st through October 31 st . |
| ESQ 12HF3 | Must be coordinated with VIT 5HF2 and HSY 12HF3. |
| HSY 12HF3 | Must be coordinated with VIT 5HF2 and ESQ 12HF3. |
| GTP 25CX1, 25CX2 | Preferred outage window March 1 st through October 31 st . |
| PIK 2RX1, SAT 2RX1 | Preferred outage window October 31 st . through March 1 st . Only one may be out at any time. |
| PVO 1CX1, 1CX2, 1CX3 | Preferred outage window March 1 st through October 31 st . |
| VIT Harmonic Filters | VIT HP2 can be taken OOS at any time. 5HF2 must be coordinated with VIT 5HF2 must be coordinated with HSY 12HF3 and ESQ 12HF3 (two of the 3 must remain in service at all times). |

FEEDERS

| | |
|-------------|----------------------|
| GLD 25CB61 | Coordinate with MEA. |
| JUL 25CB51 | Coordinate with RRH. |
| JUL 25CB52 | Coordinate with PAM. |
| KTG 25CB112 | Coordinate with HLG. |
| PAL 25F75 | Coordinate with CHI. |

APPENDIX 3C – SOUTH INTERIOR EQUIPMENT (Special Scheduling Considerations)

KAMLOOPS TRANSMISSION

| | |
|------------------------------|--|
| 60L29 | Coordinate with residential customers at SBR and AFT. |
| 1L55, 1L210, 1L211 and 1L244 | Are all radial lines and would require an outage to all TVC's and residential customers associated with these lines. |
| 1L254 | Coordinate with residential customers at MR2. |
| 1L205 | Requires an outage to Logan Lake to switch line OOS no outage required on return. |
| 1L206 | May create loading and voltage problems once Kinder-Morgan is on load. |
| 1L209 | VVW to CHS section requires an outage to LF2 to switch portions of this section OOS. |
| 1L219 | Coordinate with WEY – they can carry their own load. |
| 1L241 | Loss of Power Line Carrier to BKL. |
| 1L243 | No outages in summer peak will overload 1L205 and 1L203 when temp rises above 30 degrees Celsius. |
| 2L265 | May create loading and voltage problems once Kinder-Morgan is on load. |

VERNON TRANSMISSION

| | |
|---|---|
| 60L208 | Is a radial feed but can be fed by 1L214 (with 1L214 OOS) and an outage to MTE and WWD to make the connection. |
| 60L205, 60L209, 60L210, 60L223, 60L271, 60L287, 60L288 and 60L292 | Are all radial lines and would require outages to all TVC's associated with these lines. |
| 60L218 | Radial line to WHN and PIN (Generation). |
| 60L219 | Radial line to PIN and SCB (Generation). |
| 1L201 | Requires an outage to TIL to isolate line sections. RMR required for WGS if there is water. |
| 1L202 | RMR for WGS if there is water. |
| 1L218 | VNT to ARM section requires RVG and RVS OOS to work on this section, Coordinate with RVG and RVS outages if possible. |
| 2L253 | Is a radial line. |

CRANBROOK TRANSMISSION

| | |
|------------------------------------|--|
| 60L270 | Limits CRS import capability. |
| 60L271, 60L287, 60L288, and 60L292 | Are all radial lines and would require outages to all TVC's and residential customers associated with these lines. |
| 2L258 | Can only be scheduled during low load periods at GDN. |

SI STATIONS

| | |
|--------------|---|
| ATH T1 or T2 | No Outage during peak load periods will overload remaining bank. |
| END T2 | No Outage during peak load periods will overload T1. |
| HLD T1 | Require an outage to Logan Lake to switch transformer OOS; no outage required on return. |
| MON T5 | Will require an outage to NAK and NDR to transfer load to T1 and T2 and to restore load back to T5. |
| NTL 1VR1 | Coordinate with LCC outage will drop the 138 kV voltage to 133 kV. |
| SCM T2 | No Outage during peak load periods will overload T1. |
| STO T1 or T2 | No Outage during peak load periods will overload remaining transformer. |

REACTIVE

Intentionally blank.

FEEDERS

| | |
|-----------|---|
| 25F51 LU2 | Express feed to SHU which has major fisheries concerns. |
|-----------|---|

APPENDIX 3D – NORTH INTERIOR EQUIPMENT (Special Scheduling Considerations)

TRANSMISSION

CENTRAL AREA TRANSMISSION

| | |
|------------|---|
| 60L300 | Coordinate with GBR and MTP. Residential customers at MGT and GVL. Need to keep voltage at SCK at 70-71 kV. |
| 60L302 | Coordinate with TWT, WWL and LGW for outages between WLM and 1DS. |
| 60L303 | Coordinate with WPN, SSQ, CBP and WWQ. |
| 60L306 | Coordinate with WQL and WFQ. |
| 60L309 | Coordinate with NWE (IPP). |
| 60L327 | Coordinate with DKY, PMB and CLB residential customers. |
| 60L329 | Voltage restrictions. PLT does not have an on-load tapchanger. |
| 60L332 | If between 5/18 and 7/10 must be coordinated with NOS. |
| 60L336/338 | Coordinate with PGP (with PGP generators shutdown, either line cannot support CRD for most of the year). Also coordinate with FMC and BCM. For 60L338, coordinate with HCR. |
| 60L339 | Coordinate with DKY, PMB and CLB residential customers. |
| 60L340 | Coordinate with NWP. |
| 60L341 | Coordinate with FSS and FSR residential customers. |
| 60L344 | Coordinate with TFP, AFP and FM2 residential/commercial customers. |
| 60L352 | Coordinate with EKO. Alternate supply available using jumpers to 60L341. |
| 60L354 | Coordinate with CHF residential customers. |
| 60L358 | Coordinate with Canfor-Isle Pierre and IPR residential customers. |
| 1L357 | Coordinate with WSP residential customers. |
| 1L359 | Coordinate with KLC and FNC TVC's as well as AESO/ATCO and FNG. Only schedule in winter conditions for access on ice roads. |
| 1L365 | Coordinate with MWN residential and industrial customers in Bear Lake and KDS residential and commercial customers. |
| 1L366 | Coordinate with FCC and TBN. |
| 1L368 | Coordinate PRS. |
| 1L371 | Coordinate with TXB. |
| 1L373 | Coordinate with FFI/PRS, FCC and TBN. MFE and KDS residential and commercial customers. |
| 1L375 | Coordinate with MCM, FBC, NGL. |
| 2L307 | Coordinate with QRP. |
| 2L308 | Coordinate with LAP, QNT, BLM, DKW and KGP. Residential customers at TLR. |
| 2L309 | Coordinate with LAP, QNT, BLM and KGP. Residential customers at TLR. |
| 2L312 | Coordinate with LAP. |
| 2L313 | Coordinate with QNT, BLM and KGP. Residential customers at TLR. |
| 2L353 | Load restrictions when area load from alternate sources – study required to determine how much. |

TERRACE AREA TRANSMISSION

| | |
|--------|---|
| 60L390 | Co-ordinate with BRL (IPP) and FLS (BCH RMR required). |
| 60L391 | Coordinate with PRT. |
| 60L392 | Co-ordinate with RTI, PRG and SKL (shutdown). Outages depend on train and ship loading schedules. Residential customers fed from PED. |
| 1L381 | Co-ordinate with EWL and WNR. More significant is coordinate with MEZ and STW residential customers. |
| 1L385 | Co-ordinate with SRS and HZN residential customers. |
| 1L387 | Co-ordinate with EWL and WNR. More significant is coordinate with AYH, MEZ and STW residential customers. |
| 1L390 | Co-ordinate with BAB residential customers. |
| 1L391 | Co-ordinate with HML and HFP. HFP is a Huckleberry Mines customer. |
| 1L392 | Co-ordinate with HZN residential customers. |
| 1L393 | Co-ordinate with NHS and EQU – EQU has environmental problems during spring runoff. |
| 1L396 | Co-ordinate with 1L391 and 1L393 TVC customers. Limited supply is available from 1L398 with voltage concerns. |

APPENDIX 4 – SYSTEM EQUIPMENT IMPACTING INTERCONNECTION PATHS

The following listing of equipment and lines are known to have impacts to Interconnection reliability. Any outage requests for these assets or for equipment that require these assets to be out of service or off loaded should be considered as priorities for submission in the Annual Outage Plan. The Requested Equipment (RE) or Major Equipment Impacted (MEI) must be included in the Request.

Equipment that Impact Interconnection Paths include:

5L29, 5L30, 5L31, 5L32, 5L40, 5L41, 5L42, 5L44, 5L45,
5L51, 5L52, 5L71, 5L72, 5L75, 5L76, 5L77, 5L79, 5L81, 5L82, 5L83, 5L87, 5L91,
5L92, 5L94, 5L96, 5L98.

2L103, 2L112 (including NLY T1 phase shifter and its tap control)

All VIT, KLY and BSY Synchronous Condensers.

Series Capacitors: CHP 5CX1, CRK 5CX1, RYC 5CX1, AMC 5CX1 and AMC 5CX2

Shunt Capacitors: ING 2CX11, 2CX2, 2CX31 and 2CX32;

Reactors:

All 500 kV class reactors

ING 12RX4, 12RX5, 2RX1, 2RX2;

KI2 12RX1, 12RX2, 12RX3;

KLY 12RX1, 2RX2;

PIK 2RX2;

MDN 12RX31, 12RX32, 2RX1, 2RX2;

MSA 12RX1, 12RX2;

SAT 2RX1;

TBY 2RX1.

APPENDIX 5 – SYSTEM EQUIPMENT IMPACTING INTER-AREA TRANSFERS

These circuits and equipment are known to have impact on inter-area transfers. This is not an exhaustive listing. Any outage to adjacent equipment that offloads this equipment must contain the offloaded equipment as a Major Equipment Impacted as well as the Requested Equipment (MEI/RE) that will be out of service.

Bridge River Region:

3L2, 3L5, 2L90, 2L41, 2L1, 2L2, 2L5, BRT T4, 60L21, 60L301, ROS T1

North Coast:

2L99, 2L101, 2L102, 2L103, 5L61, 5L62, 5L63, all 500 kV class reactors

Vancouver Island:

5L29, 5L30, 5L31, 5L32, 2L129, 1L115, 1L116, 1L18, VIT Synchronous Condensers, VIT 2PST1
all 500 kV class reactors

Peace 138/230 kV Area:

1L348, 1L349, 1L350, 1L360, 1L361, 1L367, 1L374, 1L377, 2L308
GMS T11, T12, 5B11, 5B12, 1B2, 1B3, 1B4, 1B5, 1B6, 1B7, LR1, LR2, LR3;
SLS T1;
BMT T1, T2, T3, 2MB1, 2MB3, 2B11, 2B21, 2B22

Peace-Kelly Lake Region:

5L1, 5L2, 5L3, 5L4, 5L7, 5L11, 5L12, 5L13
All 500 kV class reactors,
KDY 5CX1, 5CX2, 5CX3;
MLS 5CX1, 5CX2, 5CX3;
WSN 5B11, 5B12, 5B13, 5B14, T2, T4, 12RX1, 12RX2;

South Interior:

VAS 5RX1, all 500 kV class reactors

**APPENDIX 6 – CIRCUITS THAT IMPACT TVCS AND MAJOR
COMMERCIAL DISTRIBUTION CUSTOMERS**

| Associated Outages For | Facility Code | Customer/Facility Name |
|-------------------------------|----------------------|---|
| 1L55 | LLD | Highland Valley Copper – Low Level Dam |
| 1L55 | STL | Highland Valley Copper – Spatum |
| 1L103, 1L104 | EFM | Rockyview Canada Inc. – Duncan Bay |
| 1L112 | NEX | Nanaimo Forest Products Ltd. - McPhee Industrial Park |
| 1L130 | JUL | PricewaterhouseCoopers (PWC) |
| 1L130 | MRH | Friends of the Marble River Society |
| 1L131 | CMH | Fisheries and Oceans Canada – Conuma Hatchery |
| 1L131 | MBF | Nootka Marine Adventures Ltd. – Moutcha Bay Resort |
| 1L134 | GRP | West Coast Marine Terminals |
| 1L138 | MHY | Mt. Hayes Natural Gas Storage Facility |
| 1L157 | BVC | Atli Chip Limited Partnership - Beaver Cove |
| 1L201 | TIL | Tolko Industries Ltd. – Lavington |
| 1L204 | AFN | New Gold Inc. |
| 1L204 | TMT | Trans Mountain Canada Inc. – Kamloops |
| 1L209 | LF2 | Lafarge Canada Inc. No.2 |
| 1L210 | ABA | Trans Mountain Canada Inc. – Albreda |
| 1L210 | BLP | Trans Mountain Canada Inc. – Blackpool |
| 1L210 | BLE | Trans Mountain Canada Inc. – Blue River |
| 1L210 | CPL | Trans Mountain Canada Inc. – Chappel |
| 1L210 | DFD | Trans Mountain Canada Inc. – Darfield |
| 1L210 | FPS | Trans Mountain Canada Inc. – Finn |
| 1L210 | REG | Trans Mountain Canada Inc. – Rearguard |
| 1L210 | TOK | Tolko Industries Ltd. – Heffley |
| 1L210 | TMM | Trans Mountain Canada Inc. – McMurphy |
| 1L243 | STM | Trans Mountain Canada Inc. – Stump |
| 1L244 | BDM | Glencore Canada Corporation – Brenda Mines |
| 1L251 (56L) | CUM | Copper Mountain Mining Corporation – Copper Mountain |
| 1L251 (56L) | SCO | Copper Mountain Mining Corporation – Ingerbelle |
| 1L274 (887L) | FRO | Teck Coal Ltd. – Fording River Operations |
| 1L274 (887L) | GRH | Teck Coal Ltd. – Greenhills Operations |
| 1L274 (887L) | LCC | Teck Coals Ltd. – Line Creek Operations |
| 1L355 | BPN-NL2 | Canadian Natural Resources Ltd. Noel System NL2 |
| 1L355 | BPN-NL3 | Canadian Natural Resources Ltd. Noel System NL3 |
| 1L355 | BPN-NL5 | Canadian Natural Resources Ltd. Noel System NL5 |
| 1L358 | ENK-E15 | Cutbank Ridge Partnership – Encana 15-27 |
| 1L358 | ENK-E42 | Cutbank Ridge Partnership – Encana 4-26 |
| 1L358 | ENK-KIS | Cutbank Ridge Partnership – Encana 9-27 |
| 1L358 | SGP | ARC Resources Ltd. – Sunrise |
| 1L359 (7L81W) | FNC | Harvest Energy Trust |

| Associated Outages For | Facility Code | Customer/Facility Name |
|-------------------------------|----------------------|--|
| 1L359 (7L81W) | KLC | Canlin Energy Corporation – Klua |
| 1L366 | TBN | Canfor – MacKenzie Operations |
| 1L367 | SLO | Louisiana Pacific Canada Ltd. (Canfor) |
| 1L371 | TXB | Whitecap Resources Inc. – Boundary Lake |
| 1L375 | FBC | Canfor – Taylor Pulp |
| 1L375 | NGL | Pembina Empress NGL Partnership |
| 1L377 | ET3 | Cutbank Ridge Partnership – Tower 03/07 |
| 1L377 | PLD | ARC Resources Ltd. – Parkland |
| 1L377 | SEP | Canadian Natural Resources Ltd. – Septimus |
| 1L381 | EWL | Canada Northwest Debarking Ltd. |
| 1L384 | PBL | Pinnacle Pellet Inc. – Burns Lake |
| 1L391 | HML | Huckleberry Mines |
| 1L393 | EQU | Goldcorp Canada Ltd. Equity Silver Operations |
| 1L393 | NHS | Canadian Forest Products Ltd. – Houston Sawmill |
| 1L402 | WNR | Ascot Resources Ltd. – Premier Gold Project |
| 1L403 | BJT/BJK | Pretium Exploration Inc. – Brucejack Mine |
| 2L101, 60L392 | PRG | Prince Rupert Grain |
| 2L101, 60L392 | RAY | Prince Rupert Port Authority – Ray-Mont |
| 2L101, 60L392 | RTI | Ridley Terminals Inc. |
| 2L105 | EUR-MIN | Kitimat LNG |
| 2L18 | HPL | Powertech Labs Inc. – High Power Lab |
| 2L307 | QRP | Quesnel River Pulp |
| 2L313 | KGP | Sukunka Natural Resources Inc. – Kwoen Gas Plant |
| 2L313 | MNK | Conuma Coal Resources Ltd. – Brule Mine |
| 2L319 | MML | Thompson Creek Metals Company Inc. - Mt. Milligan Mine |
| 2L320 | KMI | AuRico Metals Inc. |
| 2L322 | BLM | Sukunka Natural Resources Inc. – Bullmoose |
| 2L323 | QNT | Quintette Operating Corporation |
| 2L348 | SRN | Shell Canada Energy - Saturn 1 Gas Plant |
| 2L353 | AFP | Apollo Forest Products |
| 2L353 | STF | Ft. St. James Fuelco LP |
| 2L353 | TFP | Ft. St. James Forest Products Ltd. |
| 2L374 | RDC | New Crest Red Chris Mining Ltd. |
| 60L11 | IOC | IOCO |
| 60L11, 60L54 | SFU | Simon Fraser University |
| 60L13 | SLK | Zajac Ranch for Children |
| 60L17 | GSP | GVRD (Metro Vancouver) - Sapperton |
| 60L17 | NRG | Belcorp Properties Limited Partnership |
| 60L21 | BRP | CN Rail - Seton Pole |
| 60L31 | TII | Tree Island Industries |
| 60L33 | YVR | Vancouver International Airport |
| 60L39 | BMP | Sulzer Pumps (Canada) Inc. |
| 60L41 | RSR | Richmond Steel Recycling |
| 60L42 | LF1 | Lafarge Canada Inc. |
| | | |

| Associated Outages For | Facility Code | Customer/Facility Name |
|-------------------------------|----------------------|---|
| 60L47 | TMO | Trans Mountain Canada Inc. – Sumas Pumping Station |
| 60L54 | PCP | Suncor Energy Inc. - Burrard Products Terminal |
| 60L57 | UNS | University of BC – South Campus |
| 60L57, 60L56 | UNY | University of BC – Main Campus |
| 60L58 | DPT | Port Metro Vancouver – Deltaport Terminal |
| 60L58 | WTL | Westshore Terminals Ltd. |
| 60L59 | CAN | Canadian Autoparts Toyota Inc. |
| 60L59 | TLB | FortisBC Tilbury LNG |
| 60L59 | LNH | Lehigh Heidelberg Cement Ltd. |
| 60L59 | BCI | South Fraser Equities Inc. |
| 60L61 | BRB | G3 Terminal Vancouver Ltd. Partnership – Brooksbank |
| 60L62 | LCS | Neptune Bulk Terminals (Canada) Ltd. |
| 60L62 | SWP | Cargill Ltd. |
| 60L63 | JRI | Richardson International Ltd. |
| 60L63 | VDK | Seaspan Vancouver Drydock |
| 60L63 | VSD | Vancouver Shipyards |
| 60L67 | RO2 | City of New Westminster Royal #2 |
| 60L67 | SCP | Kruger Products L.P. |
| 60L71 | DVM | Longo Developments |
| 60L71, 60L31 | AWT | Annacis Wastewater Treatment Plant |
| 60L75 | SHL | Shell Canada Products - Shellburn Terminal |
| 60L76, 60L75 | CVN | Chevron |
| 60L80 | PKP | Trans Mountain Canada Ltd. – Port Kells Pumping Station |
| 60L90 | ERW | ERCO Worldwide |
| 60L90, 60L91 | NXC | Chemtrade Electrochem Inc. – North Vancouver |
| 60L93 | WHP | Trans Mountain Canada Inc. – Wahleach Station |
| 60L95 | HPS | Trans Mountain Canada Inc. – Hope Pumping Station |
| 60L129 | CME | MOTI – Clayoquat Message Sign East |
| 60L129 | CMW | MOTI – Clayoquat Message Sign West |
| 60L129 | TRR | MOTI – Taylor River Rest Area |
| 60L209 | FCO | Canoe Forest Products Ltd |
| 60L223 | GSM | Armex Mining Corporation – Goldstream Mine |
| 60L223 | GTL | Canadian Mountain Holiday LP – Gothics Lodge |
| 60L270 | CRC | CF BIDCO Property Holdings Ltd. – Canal Flats |
| 60L270 | KSD | Teck Metals Ltd. - Stiles |
| 60L270 | SMG | Sunmine Solar Facility |
| 60L281 | ORA | MOTI - Olson East Rest Area |
| 60L287 | CFE | Canfor – Elko |
| 60L288 | EV1 | Teck Coal Ltd. - Elkview Operations |
| 60L292 | CNT | Transcanada Pipeline LP – Crowsnest |
| 60L292 | CMO | Teck Coal Ltd. – Coal Mountain Operations |
| 60L292 | CWS | Teck Coal Ltd. – Coal Mountain Weather Station |
| 60L300 | GBW | Gibraltar Wells |
| 60L300 | MTP | Mount Polley Mining Corporation |
| 60L301 | AWL | Norbord Inc. 100 Mile OSB |

| Associated Outages For | Facility Code | Customer/Facility Name |
|-------------------------------|----------------------|--|
| 60L302 | TWT | Tolko Industries – Soda Creek Division |
| 60L302 | LGW | Tolko Industries – Lakeview |
| 60L302 | WWL | West Fraser Mills Ltd. – Williams Lake |
| 60L303 | SSQ | West Fraser Mills Ltd. – Quesnel Commons Rd. |
| 60L303 | WPN | West Fraser Mills Ltd. – West Pine MDF |
| 60L306 | WQL | West Fraser Mills Ltd. – Quesnel Plywood |
| 60L306 | WFQ | West Fraser Mills Ltd. – Quesnel |
| 60L310 | GBR | Gibraltar Mines |
| 60L332 | NOS | Canfor - Willow Cane Road |
| 60L336, 60L338 | BCM | Chemtrade Pulp Chemicals – Chlorate IV |
| 60L336, 60L338 | FMC | United Initiators Canada Ltd. |
| 60L339 | DKY | Dunkley Lumber |
| 60L339, 60L327 | PMB | Pinnacle Pellet Inc. – Meadowbank |
| 60L339, 60L327 | WCF | Westcoast Chip Plant |
| 60L341 | FSS | Fraser Lake Sawmill |
| 60L341 | PLT | Canfor, Plateau |
| 60L345 | HSK | Tidewater Mainstream and Infrastructure Ltd. |
| 60L348A, 60L348B | BCC | Chemtrade Pulp Chemicals |
| 60L352 | EKO | Thompson Creek Mining Ltd. - Endako Mines |
| 60L391, 2L101 | PRT | Fairview Container Terminal (Prince Rupert Port Authority) |
| BAB 25F52 | BLR | Bell Mine |
| BBS 12F112 | BPS | Ballard Power Systems |
| NEL 12F83 | BP1 | Ballard Power System 1 |
| WAR 12F51 | BRM | Bull River Mineral |

APPENDIX 7 – CIRCUITS THAT IMPACT IPP’S AND TVC’S WITH GENERATION

| Associated Outages For | Facility Code | Name |
|-------------------------------|---------------|---|
| ARN 25F32 | VLG | Vancouver Landfill GS |
| ARN 25F33 | HNL | Houweling’s Nurseries Ltd. |
| CAM 25F61 | FRS | Fraser Richmond Soil and Fibre GS |
| CAP 12F58 | GMW | Grouse Mountain Wind |
| CSN 12F78, CSN 12F88 | ISP | Metro Vancouver – Iona Wastewater Treatment |
| CWD 25F51 | CIB | West Fraser Mills Ltd. – Chetwynd Biomass |
| CWD 25F51 | CPF | Canadian Forest Products Ltd. – Chetwynd Pellet |
| FCN 25F51 | BDW | Brandywine Creek GS |
| GDN 25F53 | EVP | LP Engineered Wood Products Ltd. |
| GIB 25F54 | MCH | McNair Creek Hydro |
| GLD 25F61 | CCH | Cypress Creek |
| GLD 25F61 | MEA | Mears Creek GS |
| HOP 25F53 | HNC | Hunter Creek Hydro LP GS |
| KTG 25F112 | HLG | Hartland Landfill Gas GS |
| MIS 25F51 | SKW | Sakwi Creek Hydroelectric GS |
| PAL 25F72 | CHI | China Creek GS |
| PEM 25F61 | MCP | Miller Creek GS |
| RBW 25F64 | FTZ | Fitzsimmons Creek GS |
| RBW 25F65 | SOR | Soo River Hydro |
| SMW 25F63 | BKE | EcoDairy IPP |
| SVA 25F51 | SVN | Savona ERG |
| WAH 25F52 | LRC | Zella Holdings Ltd. – Lorenzetta Creek |
| WLM 25F66 | HFH | 150 Mile House ERG |
| 60L10, BBR 25F52 | BBH | Boston Bar Hydro |
| 60L21 | WDN | Walden North |
| 60L22, 60L55 | JME | Jamie Creek LP |
| 60L29, AFT 25F52 | CCL | Cache Creek Landfill Gas Plant |
| 60L66 | CPS | Capilano Pumping Station |
| 60L68, 60L70 | MAM | Altantic Power – Mamquam River |
| 60L68, 60L70 | UMH | Canadian Hydro Developers – Upper Mamquam |
| 60L69 | FRI | Furry Creek Power Ltd. |
| 60L71 | SEE | Metro Vancouver – Seegen |
| 60L98 | CTN | Culliton Creek Power LP |
| 60L210, MON T5, NDR 12F52 | SVS | Silversmith Power and Light Corp |
| 60L218, 60L219, ILL T4, 2L253 | PIN | Pingston Power Inc. |
| 60L218, 60L219, ILL T4, 2L253 | SCB | Advanced Energy Systems (South Cranberry) |
| 60L270 | CRS | Skookumchuk Pulp Inc. |
| 60L292 | CRW | WCSB Power BC II LP – Crowsnest Pass GS |
| 60L303 | CBP | Cariboo Pulp & Paper |
| 60L309 | NWE | Atlantic Power Preferred Equity – Williams Lake |
| 60L336, 60L338 | HCR | Canfor Pulp Products – High Consistency Refiner |
| 60L340 | NWP | Canfor – Northwood Pulp Mill |
| 60L341 | FLB | West Fraser Mills Ltd. – Fraser Lake Biomass |
| 60L342, 60L343 | PGP | Canfor Pulp Ltd. – Prince George Pulp & Paper |

| Associated Outages For | Facility Code | Name |
|---|----------------------|--|
| 60L346, 60L347 | ICP | Canfor Pulp Ltd. – Intercontinental Site |
| 60L389 | DSQ | Swift LP – Dasque Creek GS |
| 60L389 | MDL | Swift LP – Middle Creek GS |
| 60L390 | BRL | Brown Lake GS |
| 1L31 | BOX | Box Canyon Hydro Corporation |
| 1L31 | WFR | Woodfibre LNG |
| 1L37 | CKW | Chickwat |
| 1L37 | NIT | tems sayamkwu LP – Narrows Inlet |
| 1L37 | RML | Ramona Creek Lower |
| 1L37 | RMU | Ramona Creek Upper |
| 1L37 | TYS | Tyson Creek IPP |
| 1L38 | SKO | Skookum Creek Power Partnership |
| 1L44 | SCG | Sechelt Creek GS |
| 1L44, 1L45 | BHL | Lower Bear Hydro IPP |
| 1L44, 1L45 | BHU | Upper Bear Hydro |
| 1L44, 1L45 | BRK | Bear/Clowhom Tap Station |
| 1L44, 1L45 | LCH | Lower Clowhom |
| 1L44, 1L45 | UCH | Upper Clowhom |
| 1L48, 1L33, 2L48 | POW | Catalyst Powell River |
| 1L57 | KCH | Kwoiek Creek Resources |
| 1L103, 1L104 | ICG | Island Generation Facility |
| 1L105, 1L114 | APP | Catalyst Paper Port Alberni Division |
| 1L112 | HMC | Nanaimo Forest Products – Harmac Pacific |
| 1L127, 60L129 | CNK | Canoe Creek Hydro |
| 1L127, 60L129 | DTR | Summit Power Corporation – Doran Taylor |
| 1L127, 60L129 | HAS | Haa-Ak-Suuk Creek Hydro LP |
| 1L127, 60L129 | M3C | Marion Creek Hydro Inc. |
| 1L127, 60L129 | SSH | South Sutton Creek Hydro Inc. |
| 1L127, 60L129 | WCH | Winchie Creek Hydro |
| 1L131, TSV 25F52 | BAC | Barr Creek |
| 1L131 | ZBL | Zeballos Generating Station |
| 1L131 | ZBT | Zeballos Lake Terminal |
| 1L139, 1L140 | CFT | Catalyst Paper – Crofton Division |
| 1L157, 1L125, 1L137, 1L141 | CSS | Cape Scott Wind |
| 1L157, 1L158 | KKS | Kwagis Power LP – Kokish River |
| 1L157, 1L125, 1L130, JUL 25F51 | RMB | Rumble Beach |
| 1L157, 1L125, 1L130, JUL 25F51 | RRH | Raging River Hydro |
| 1L210, 1L211, 1L228 | BNC | Canadian Hydro Developers – Bone Creek |
| 1L210, 1L211, 1L225, VLM T3, VLM 25F51 | HYC | Hystad Creek |
| 1L210, 1L211, 1L225, VLM T3, VLM 25F51 | LMH | Lafferma Micro-Hydro |
| 1L210, 1L211, 1L225, VLM T3, VLM 25F52 | CSL | Castle Creek |
| 1L210, 1L211, 1L225, VLM T3, VLM 25F52 | ETC | East Twin Creek |

| Associated Outages For | Facility Code | Name |
|---|----------------------|--|
| 1L210, 1L211, 1L225, VLM T3, VLM 25F52 | HAC | Hauer Creek Power Inc. |
| 1L210, 1L211, 1L225, VLM T3, VLM 25F52 | RBV | Robson Valley Power Corp. |
| 1L210, 1L211, 1L225, VLM T3, VLM 25F52 | MIK | Snowshoe Power Ltd. – McIntosh Creek |
| 1L218 | RVG/RVS | Tolko Industries GS |
| 1L219 | WEY | Domtar Pulp & Paper Products Inc. - Kamloops |
| 1L244 | PSW | PSS Renewables LP – Pennask & Shinnish Wind |
| 1L249, 1L254 | MIG | Merritt Green Energy LP |
| 1L354 | BMW | Bear Mountain Wind Limited Partnership |
| 1L366 | FCC | MacKenzie Pulp Mill Corporation |
| 1L368 | PRS | Conifex Mackenzie Forest Products Ltd. – Parsnip |
| 1L375 | MCM | McMahon Power Holdings LP – McMahon Cogen |
| 1L375 | MGP | NorthRiver Midstream– McMahon Gas |
| 1L403, 1L381, 1L387, SKA T6 | LNL | Regional Power Long Lake GS |
| 2L2 | RUT | Rutherford Creek GS |
| 2L12 | ASL | Ashlu Creek GS |
| 2L29, 2L48 | PSY | Toba Montrose GP – Plutonic Terminal Station |
| 2L42 | BDH | Boulder Creek |
| 2L42 | ULR | Upper Lillooet |
| 2L47 | HSP | Howe Sound Pulp and Paper – Port Mellon |
| 2L48, 2L29 | ETR | Toba Montrose GP – East Toba River |
| 2L48, 2L29 | JMC | Jimmie Creek IPP |
| 2L48, 2L29 | MTC | Toba Montrose GP – Montrose Creek |
| 2L102, 2L379 | FKR | Coast Mountain Hydro – Forrest Kerr |
| 2L102, 2L379 | MCY | McLymont GS |
| 2L102, 2L379 | VOL | Volcano Creek GS |
| 2L353 | NLV | Nechako Lumber Company Ltd. |
| 2L253, ILL 25F63 | AKO | Canadian Hydro Developers Inc. – Akokolex |
| 2L290 (81L) | ALH | Arrow Lakes Hydro |
| 2L313, 2L339 | MKL | Meikle Wind Energy LP |
| 2L314 | DKW | Dokie Wind Farm |
| 2L337, 2L313 | MLW | Moose Lake Wind LP |
| 2L337, 2L313, 2L315 | QTY | Quality Wind Farm |
| 2L353, 60L344, 60L359 | FGE | Fort St. James Green Energy |
| UHT 3B3 | BSV | Harrison Hydro LP – Big Silver Creek |
| UHT 3B3 | DGL | Harrison Hydro LP – Douglas |
| UHT 3B3 | FRE | Harrison Hydro LP – Fire |
| UHT 3B3 | KWL | Harrison Hydro LP – Kwalsa |
| UHT 3B3 | LMN | Harrison Hydro LP – Lamont |
| UHT 3B3 | NWS | Harrison Hydro LP – Northwest Stave |
| UHT 3B3 | SKK | Harrison Hydro LP – Stokke |
| UHT 3B3 | TPA | Harrison Hydro LP – Tipella |
| UHT 3B3 | TWY | Harrison Hydro LP – Tretheway |
| UHT 3B3 | USR | Harrison Hydro LP – Upper Stave |

APPENDIX 8 – CIRCUITS THAT IMPACT BC HYDRO GENERATION

Note: Refer to SOO 7T-12 “Reliability Must Run Generation Requirements” for more detailed information.

| Associated Outages For | Facility Code | Generating Station Name |
|--|----------------------|--------------------------------|
| 60L20, 60L21 | SON | Seton |
| 60L22 | LAJ | Lajoie |
| 60L218 | WHN | Walter Hardman |
| 60L271 | SPN | Spillimacheen |
| 60L289 | ABN | Aberfeldie Generating Station |
| 60L301 | SON | Seton |
| 60L395 | RPG | Prince Rupert Gas |
| 60L390 | FLS | Falls River G.S. |
| 1L44 | COM | Clowhom |
| 1L127, 1L142 | ASH | Ash River |
| 1L143, 1L146 | JOR | Jordan River |
| 1L246 | WGS | Whatshan |
| 2L1, 2L2, 2L41 2L78/ROS T1, 2L90, 3L2, 3L5 | BR1 | Bridge River 1 |
| 2L1, 2L2, 2L41, 2L78/ROS T1, 2L90, 3L2, 3L5 | BR2 | Bridge River 2 |
| 2L12 | CMS | Cheakamus |
| 2L221, 2L222 | SEV | Seven Mile |
| 2L288, 2L295, 2L299 | KCL | Kootenay Canal |
| 2L253 | WHN | Walter Hardman |
| 3L13 | BR2 G5 and BR2 G6 | Bridge River 1, Bridge River 2 |
| 3L14 | BR2 G7 and BR2 G8 | Bridge River 1, Bridge River 2 |
| 3L15 | BR1 G1 and BR1 G4 | Bridge River 1, Bridge River 2 |
| 3L16 | BR1 G2 and BR1 G3 | Bridge River 1, Bridge River 2 |
| 5L1, 5L2, 5L3, 5L4, 5L7, 5L11, 5L12, 5L13 | GMS | Gordon M. Shrum |
| 5L1, 5L2, 5L3, 5L4, 5L7, 5L11, 5L12, 5L13 | PCN | Peace Canyon |
| 5L75, 5L77 | REV | Revelstoke |
| 5L71, 5L72 | MCA | Mica |
| BRT T4 | BR1, BR2 | Bridge River 1, Bridge River 2 |
| ILL T4 | WHN | Walter Hardman |
| JOR T1 or T2 | JOR | Jordan River |