BPA Outage Planning and Coordination Policy

Bonneville Power Administration

DRAFT

Effective:~~October 23, 2020~~May 12, 2021

Table of Contents

Section 1: Introduction 3

Section 2: Purpose 3

Section 3: Scope 4

Section 3: Definitions 4

Section 4: Policy 10

4.1 Outage Notification 10

4.1 Coordination and Communication 10

Section 5: Responsibilities 10

5.1 BPA Outage Offices (Dittmer or Munro) 10

5.2 Outage Requestor 10

5.3 Transmission Operations Study Engineers 11

Section 6: Procedures 11

6.1 Scheduling an outage: 11

6.2 Review of planned outages: 11

6.3 Assess Scheduling Conflicts: 12

6.4 Coordinate final outage plan: 12

6.5 Publish Final Outage Plan: 12

6.6 Revisions to the Equipment List: 12

Section 7: Contact Information 13

Section 8: References 13

Section 8: Policy Review and Revision Timelines 13

Appendix 1 - Outage Submission and Approval Timelines 16

Appendix 2 – Equipment List (Long-Range, Mid-Range and Short-Range (21 and 14 Day) Equipment) 22

Appendix 3 – Considerations in requesting outages in the Equipment List (Long-Range, Mid-Range and Short-Range (21 and, 14 Day) Equipment) 23

Appendix 4 – Map of NW Constrained Paths (Major Interties/Flowgates) 28

Appendix 6 – Additional BPA Reporting Requirements 31

Effective:~~October 23, 2020~~May 12, 2021

Section 1: Introduction

This document serves as the official BPA Outage Planning and Coordination Policy. The Outage Coordination Process is intended to comply with NERC Reliability Standards. Throughout the BPA Outage Planning and Coordination Policy, sections of the document list the various responsibilities. These responsibilities include BPA, adjacent facilities, shared facilities, neighboring entities, and other entities within the BPA Balancing Authority (BA) and Transmission Operator (TOP) area. This document also supports the coordination requirements to meet the Reliability Coordinator's (RC's) Outage Coordination Process.

Section 2: Purpose

The purpose of the BPA Outage Planning and Coordination Policy document is to:

1. Provide a process for coordination of transmission and generation outages within the BPA TOP and BA area and define equipment under jurisdiction of other TOPs and BAs impacting the reliability of the Bulk Electric System (BES) within the BPA TOP/BA area.
2. Describe the applicable roles and responsibilities.
3. Provide a mechanism to facilitate compliance with NERC Reliability Standards IRO-010-2, TOP-003-3, TOP-001-3, TOP-002-4 and IRO-017-1, or their successors.
4. Minimize outage conditions where schedule curtailments, generation redispatch, and load management actions are likely to occur on the system under BPA jurisdiction and the BES under jurisdiction of other BA/TOPs.
5. Minimize late-term cancellation of scheduled outages.

Proposed transmission and generation outages that may impact the BES must be planned and coordinated among BAs, TOPs, and reported to their RCs. This includes any non- BES equipment that may affect the reliability of interconnected operations for the region.

This document provides technical requirements and criteria for BPA transmission operations, maintenance, engineering, hydro operations, customer and construction staffs related to the submission of transmission and generation outages. This document provides requirements for coordination of outages on equipment outside of BPA's TOP/BA area.

Section 3: Scope

This policy addresses the roles, methods and procedures that inform BPA Outage Dispatchers of the equipment outages needed to support planned maintenance and construction as well as urgent and emergency work on the power system.

This policy only addresses needs for information relating to equipment that impacts the BES and when taken out of service, by itself or in conjunction with other equipment will require inclusion in a study. This information is conveyed to and utilized by Operations Planning and Real-Time Study Engineers for modeling of the transmission system.

This policy does not supersede BPA's Accident Prevention Manual or BPA's Contractor: Clearance, Hold Order, and Work Permit Procedure.

Section 3: Definitions

Bulk Electrical System (BES) – BES transmission and/or generation equipment/facilities (as defined by NERC).
BES transmission/generation Facilities (as defined in the RC's process) includes:

1. BES Out of service (outages)
2. Derates (or changes to defined SOL)[1]
3. BES/non-BES nessecary for voltage control.
4. BES Remedial Action Scheme (RAS), non-RAS automatic schemes, or protection systems when functionality is affected (i.e., when normal fault clearing zones are impacted) or Contingency definitions are impacted.
5. BES generating unit Automatic Voltage Regulators (AVR), BES Power System Stabilizers (PSS) or BES alternative voltage controlling device[2]
6. Non-BES transmission or generation Facilities or equipment that is identified by the RC, TOP or BA as having an impact on the reliability of the BES.
7. Path or Facility TTC limits if part of an operating plan

Conflict Resolution – Outages can have conflicts independent of other outages, or they can have conflict with other outages on the system. Any outage (excluding Forced) may not proceed without an Operating Plan that addresses the reliability conflict.

[1] Derates may also be referred to as outages. Both derates and outages are considered "requests" to perform work.
[2] AVR and PSS equipment outages are generally communicated real-time.

Conflict Resolution Process – The RC uses a first-come, first-served model for conflict resolution. If agreement cannot be reached between TOPs and BAs, the first requesting entity in the Proposed or Confirmed state in WebOMS (Pending or Scheduled in DART) has priority.

Constrained Path – An intertie or flowgate (a line or group of lines and/or transformers) on which power flow is monitored to ensure reliable operation of the transmission system.

DART- Daily Activity Record Tracking System, BPA's system used to request, and process outages.

Day – 00:01 – 24:00 Pacific Prevailing Time (PPT)

Energy Management System (EMS) – A suite of computer applications used by operators of electric utility grids to monitor, control, and optimize the performance of the generation and transmission system.

Facility Operator- Entity with jurisdiction and physical control over the equipment who is capable of taking the equipment out of service.

Flowgates - A line or group of lines and/or transformers on which power flow is monitored to ensure reliable operation of the transmission system.

Generation Consideration – Generation restrictions that result due to a specific equipment outage.

Interties – A system of transmission lines permitting a flow of energy between major power systems.

Load and Voltage Consideration – An outage of this specific equipment may create load service or voltage control issues for the next contingency or in combination with another planned outage.

Off-peak Hours – Hours between 2200 PPT and 0600 PPT and all hours on Sundays and holidays.

On-peak Hours – Hours between 0600 PPT and 2200 PPT every day except on Sundays and holidays.

One-at-a-Time (OAT) Outages – A subset of Planned outages that are available for use by the BA/TOP. The purpose of the OAT is for the BA/TOP to be able to perform work on numerous elements of similar Facilities/equipment at a single station without having to maintain the

required outage requests that would normally be associated with each element.

1. Generation OAT Requests: Individual unit outages taken sequentially at a single generating Facility where the individual units have similar operating characteristics and are connected at the same kV level.
2. Transmission OAT Requests: Created to provide real-time situational awareness for activity at a single station. Transmission OAT outages are restricted to non-BES transmission equipment that is not sent to the RC.

Outage request – An application for a period of time when equipment (normally in service) is to be taken out of service.

Outage process participants – All facility operators responsible for operating the BES within their jurisdiction.

Outage week – Monday through Sunday

Outage Types –

Planned Outage – Non-automatic facility/equipment outage with advance notice, for the purpose of maintenance, construction (including energizing and testing new facilities), inspection, testing or other planned activities.

Operational Outage – Transmission facility/equipment that is removed from service in the normal course of maintaining optimal or reliable system conditions but remains available if needed upon short notice.

Forced Outage – Facility/equipment that is removed from service real-time with limited or no notice.

Urgent Outage – Facility/equipment that is known to be operable, yet carries an increased risk of a Forced Emergency or Forced Automatic outage occurring. Facility/equipment remains in service until personnel, equipment and system conditions allow the outage to occur.

Opportunity Outage – A short-duration (one day) facility/equipment outage that can be taken due to a change in system conditions or availability of field personnel. Opportunity outage must not require an Operating Plan and must be submitted prior to the OPA lock-down. Opportunity Outages are not a means to accomplish normal routine planned maintenance or testing. See Appendix 1 for details.

Informational Outage – Facility/equipment outage that is entered for informational reasons including increased situational awareness, for BA/TOP internal purposes or to satisfy the RC Data Specification where WebOMS is the mechanism for communicating the information.

Operational Planning Analysis (OPA) Lock-down – The OPA Lock-down time is 5 a.m. PPT, one business day prior to the start date of the outage.

Peak loading period – Hours when loading on the specific area of the transmission system is consistently highest. Load areas typically have a short significant morning (0800 PPT) and late afternoon (1800 PPT) peak loading period that lasts a couple of hours in the winter. In the summer, the load often doesn't peak until early afternoon and may stay relatively high for 4-6 hours then back off and increase for a short period of time near sunset as lighting load comes on. Thermal generators operate most efficiently with a constant MW output. In a geographical area that has large amounts of thermal generation, this output is consumed by local loads during on-peak hours. During off-peak hours, the output can be exported to areas where generation can be easily reduced which results in the highest transmission loading during off-peak load conditions. The transmission between Montana and the Northwest that supports Colstrip generation is a good example of transmission that experiences its highest loading during off-peak conditions.

Rating - The maximum transfer capacity of an intertie or flowgate.

Revision – Outages are considered to be revised if they are changed after they are in the Proposed or Confirmed state (Pending or Scheduled in DART). An outage is considered revised if the dates fall outside of the original start and/or stop date or equipment is revised.

Study/Assessments[3] -

Study - Mathematical modeling of the transmission system that simulates generation and load levels, topology, equipment ratings, protection schemes, planned maintenance/construction outages, and potential contingencies. A study includes pre- and post-Contingency powerflow simulations and analyses using one or more study models. A study also includes necessary transient, post-transient and steady-state stability analyses.

Assessment - An assessment may not include these technical analyses, but rather may rely on system knowledge, experience, prior studies, and operational and engineering judgment. The assessment term may also be more appropriate to describe BA

[3] Note: The RC's Process requires an Assessment or a Study in certain timelines of outage coordination.

functions. For example, when a BA determines the generation needed to support expected demand patterns, this effort describes a BA "assessment."

Total Transfer Capability (TTC) – The amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions.

System Operating Limit (SOL) –The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to:

1. Facility Ratings (Applicable pre- and post-Contingency equipment or facility ratings)
2. Transient Stability Ratings (Applicable pre- and post-Contingency Stability Limits)
3. Voltage Stability Ratings (Applicable pre- and post-Contingency Voltage Stability)
4. System Voltage Limits (Applicable pre- and post-Contingency Voltage Limits)

WebOMS – RC West Outage Management System

Long Range equipment- All 500kV transmission equipment that may impact the Bulk Electric System (BES) or require a capacity reduction to assure reliable operation on a constrained path. This includes equipment outages that alone might not affect the electrical system or capacity, but under credible conditions, in combination with other outages, could have a significant impact or capacity reduction. For example, a 500kV Breaker outage may not force out a transmission line or transformer but the outage of that breaker can change the equipment forced out of service due to a breaker failure operation of another 500kV breaker in that station. Those impacts need to be included when determining transmission impacts and/or system capacity.

It is highly recommended to submit all BES outages for the Long Range to ensure that all outage impacts are considered during this time frame. Examples would be:

- Outages in the Puget Sound Area
- Redmond Area
- Some of the Southern Oregon Coast
- Tri-Cities Area

- Lines/equipment connected to Federal Hydro System
- Customer Interruptions

Mid-Range equipment – Equipment that (when taken out of service) may impact the Bulk Electrical System (BES) or require a capacity reduction to assure reliable operation on a constrained path. This includes equipment outages that alone might not affect the electrical system or capacity, but under credible conditions, in combination with other outages, could have a significant impact or capacity reduction. For example, a 230kV Bus Sectionalizing Breaker outage may not force out a transmission line or transformer but the outage of that breaker can change the post-contingency loading patterns at that station which could, in turn, result in overloads or stability issues. Those impacts need to be included when determining transmission impacts and/or system capacity. If a circuit breaker can be bypassed on the same bus section, the Mid-Range timeline can be ignored.

> Certain Mid-Range equipment outages by themselves will typically have an impact on the SOL/TTC for the paths/flowgates noted and are intended to be part of the monthly outage coordination meeting.
>
> Additionally, some Mid-Range equipment outages when combined with other equipment outages may impact the SOL/TTC for the paths/flowgates noted and are intended to be included in planned outage studies.

Short-Range (21 Day) equipment – BES equipment outages marked in the equipment list are required to be submitted 21 days prior to the Outage Week (Monday to Sunday) in which the outage is scheduled to start. This includes outages that may require additional time for Study Engineers to prepare Operating Plans. This includes generation derates of 50mw or greater at the unit or aggregate plant level.

Short-Range (14 Day) equipment – All other BES Planned outages, unless noted in the exception list (See Appendix 1), are required to be submitted 14 days prior to the Outage Week (Monday to Sunday) in which the outage is scheduled to start. This includes generation derates of 50mw or greater at the unit or aggregate plant level.

Transmission Outage Request Timelines for Equipment (see Appendix 1)

Section 4: Policy

4.1 Outage Notification

BPA requires notification of Urgent, Emergency, and Planned outages of all transmission or generation equipment which can impact the BES and/or reduce system capacity within its jurisdiction, in order to:

1. Meet safety standards;
2. Meet reliability criteria;
3. Meet compliance requirements;
4. Meet capacity availability requirements.
5. Meet RC requirements.

4.1 Coordination and Communication

BPA will coordinate and communicate outage plans so that:

1. Operating with a known and studied SOL/TTC on a facility, specific to the outage condition, is achieved;
2. Opportunities for maintenance and construction work for related equipment are known;
3. Operation of the system in a constrained condition is minimized.
4. Applications for planned outages of Long-Range, Mid-Range, and Short-Range equipment shall be made as far in advance as possible.

Section 5: Responsibilities

5.1 BPA Outage Offices (Dittmer or Munro)

BPA Outage Offices (Dittmer or Munro) ensure the work requested can be accomplished safely. In addition, they receive and review outage requests, assure that equipment nomenclature is accurate, assess conflicting outages, communicate with outage requestors, and finalize the outage plans.

5.2 Outage Requestor

An Outage Requestor is the Facility Operator of who requests an outage to perform planned maintenance, construction, testing, urgent, or emergency work.

5.3 Transmission Operations Study Engineers

Transmission Operations Study Engineers provide studies that model the potential contingencies, determine limits and operating plans.

5.4 Real-Time System Operating Engineers (RTSOE)

Real-Time System Operating Engineers perform the OPA studies. RTSOE also perform Real-Time Contingency Analysis (RTCA).

Section 6: Procedures

6.1 Scheduling an outage:

1. Outage requests originating within BPA are submitted thru DART. The outage requests are normally submitted through the Chief Substation Operator for the District. The Outage Offices will ensure the outages are submitted to WebOMS.

2. Outage requests or notifications by facility operators other than BPA are submitted via WebOMS in at least a Preliminary State (Submitted in DART) and communicated (verbally and by email) to/from the impacted Facility Operator.

6.2 Review of planned outages:

1. BPA Outage offices (Dittmer or Munro) review submitted outage requests to assess which equipment is involved, that all foreign clearances and hold orders are identified, and that the request meets the minimum advance notice requirement.

2. Requests that do not meet minimum timing requirements or are incomplete will normally be returned by the outage office to the requestor/submitter. BPA will follow the RC Conflict Resolution Process for outage requests/notifications inside and outside of BPA's TOP/BA area.

3. Note: BPA's determination of adherence with minimum time requirements, (See Appendix 1) based on request type, will be made by applying the time at which the request status becomes "Submitted" in DART.

6.3 Assess Scheduling Conflicts:

1. BPA Outage offices (Dittmer or Munro) develop a preliminary outage plan that includes all requested outages for Long-Range, marked with the "COA" checkbox in DART, and Mid-Range equipment. As assessments get underway, equipment can be changed in WebOMS to "Proposed" state (Pending in DART).

2. This preliminary plan will be used to assess impacts to the BES and identify potential outage scheduling conflicts.

6.4 Coordinate final outage plan:

1. BPA will facilitate a coordination meeting with outage process participants to identify and resolve conflicts in order to develop the final outage plans.
2. Participants are expected to attend the coordination meeting to identify and resolve conflicts.

6.5 Publish Final Outage Plan:

1. BPA will determine these final outage plans and assure that participants are informed of all agreed upon changes to individual outage requests (if any).

2. These plans are then used to perform assessments and studies.

6.6 Revisions to the Equipment List:

1. BPA may modify (add or delete equipment) the Equipment List as needs arise.

2. If the modification involves equipment not owned by BPA, the modification will be coordinated with the facility owner/operator.

3. For BPA equipment, the modification will be coordinated with the affected owner.

4. Additions to the Equipment List will be effective according to the timeline in Appendix 1.

Section 7: Contact Information

BPA Outage Office Contact Information:
DCC Outage Office Phone Number: 360-418-2274
MCC Outage Office Phone Number: 509-822-4540
E-Mail: BPAOutage@bpa.gov

For Questions about the Equipment List:
BPATier1Tier2Outages@bpa.gov

Section 8: References

DART User Guide
RC0630 Reliability Coordinator Procedure – Outage Coordination Process
RC0610 Reliability Coordinator Procedure – System Operating Limits Methodology for the Operations Horizon
RC0620 – Reliability Coordinator Procedure – Operations Planning Analysis (Next Day)
NERC Standards
WECC Standards

Section 8: Policy Review and Revision Timelines

At a minimum, this policy will be reviewed annually.

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Version History

Version	Date Revised	Description of Changes
1.0	05/09/2014	BPA Outage Policy Publication
2.0	04/10/2015	Additional definitions; removed reference to OB-19; added Appendix 3 – Considerations for Requesting outages of Tier 1 and Tier 2 Equipment, including additional paths – SOC, NOEL, CI & WI; Appendix 4 – Map of NW Constrained Paths; Appendix 5 –Seasonal & Simultaneous 500kV Line Outage to Avoid
3.0	10/01/2015	Added Appendix 6 – Additional Information for BPA Equipment Outages
4.0	03/09/2016	Updated Appendix 2 - Tier 1 and Tier 2 equipment. Revised and updated to
5.0	03/24/2017	reflect process, language and timeline changes to meet Peak's Outage Coordination Process. Clarification of external and internal location of Appendix 2 and Appendix 5 added.
6.0	12/6/2018	Revised to add Long-Range Equipment requirements and other edits.
7.0	3/7/2019	Renamed 45 day to Mid-Range; 21/14 day to Short-Range. Mid-Range timeline is two months in advance of Outage Month. *If submission date falls on weekend or federal holiday, outage must be submitted on previous business day.*

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8.0	8/26/2019	Added examples for outage submission timelines. Revised to reflect RC Changes.
9.0	7/1/2020	Added additional information about Tag Holders to Appendix 6
10.0	10/23/2020	Update to Appendix 6 – Additional BPA Reporting Requirements
11.0	05/12/2021	Removed North of John Day path and updated some best times for outages

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Appendix 1 - Outage Submission and Approval Timelines

LongRange Equipment requirement: Long-Range Equipment outage requests are required to be Submitted to BPA's DART**,** no later than 3:00 P.M. Pacific Prevailing Time (PPT) on the first working day,**5 months prior to the month** the outage is scheduled to start. If requests are between the LongRange and Mid-Range submittal windows, submitters can mark it as "COA" in DART for review prior to the Mid-Range process. For example all outages beginning in July are due by February 1st. Note: If the submission date falls on a weekend or federal holiday, the outage must be submitted on the previous business day.

- Exclusions:
  - 500kV Motor Operated Disconnect (MOD) mechanism service
  - 500/230kV transformer bank accessory services
  - Batteries and battery chargers
  - Sequential Even Recorders(SER)
  - Digital Fault Recorders
  - Meters
  - Redundant relay set
  - SCADA RTU
  - Phaser Measurement Unit (PMU)
  - All other 500kV transmission equipment (Redundant relays, Hold Orders, other equipment with redundancy which doesn't impact the BES when removed from service).

Mid-Range Equipment requirement: Mid-Range equipment outage requests are required to be in a Submitted status in BPA's DART **two months prior to the month** the outage is scheduled to start by 3:00 P.M. (PPT). Note: If the submission date falls on a weekend or federal holiday, the outage must be submitted on the previous business day.

Short-Range (21 Day) Equipment requirement: 21 Day Equipment outage requests are required to be in a Submitted status in DART no later than 3:00 P.M. (PPT), **21 days prior to the outage week** in which the outage is scheduled to start.

Short-Range (14 Day) Equipment requirement: All BES Planned outage requests are required to be in a Submitted status in DART no later than 3:00 P.M. (PPT), **14 days prior to the outage week** in which the outage is scheduled to start.

If BPA determines that the coincidence of planned outages represents an unreasonable risk to reliability, BPA will take steps to negotiate changes to the planned outages thereby reducing operational risk. If unable to resolve the conflict, BPA will use the RC Conflict Resolution Process which allows the outage request submitted first to continue as planned.

Additions/changes to Equipment in appendix 2:
If BPA determines that equipment must be added to the Equipment List in Appendix 2, BPA will allow 21 days until the change will be implemented.

Equipment removed will take effect immediately.

The Equipment List may not contain every piece of equipment that is required in the Short-Range (21 Day or 14 Day) time period. Refer to the list below for types of outages or equipment that falls into each category.

Outage requests for Equipment that do not meet the submission timeline:
BPA has the discretion to accommodate late outage requests. However, if BPA is unable to accommodate a change to an existing request or a new request, BPA will mitigate using theRC's Conflict Resolution process.

Requests made after the 21 days must not require an Operating Plan or a change to an existing Operating Plan.

Short-Range (14 Day) Equipment (not listed in the Equipment List):

1. Customer Interruptions
2. Power Circuit Breaker (PCB) bypass
3. Communications equipment. Including, but not limited to telemetering, control equipment, SCADA RTU, ICCP, fiber that is non-redundant
4. Energy Management System (EMS) work that disables any portion of the ISO Grid monitoring, control or protective equipment including EMS equipment and communication circuits
5. EMS work that affects Generator AGC or RIG equipment or communication circuits

4 Day equipment:
The equipment and outage categories below may or may not be considered BES. These are required to be submitted in BPA's DART system no later than by 1200 hours, 4 business days prior to the day the outage is scheduled to start. The list below contains some types of outages that require 4 business days, but is not an all-inclusive list. Contact the BPA Outage Office for submission requirements on equipment not listed below.

1. All Hold Orders not requiring a line outage.
2. Most redundant relays
3. Sequential Event Recorder (SER)
4. SCADA RTU
5. Digital Fault Recorder (DFR)
6. Meters
7. Phaser Measurement Unit (PMU)

8. Motor Operated Disconnect (MOD) Mechanisms
9. Generation Data Acquisition Computer (GDAC)
10. All other equipment (Redundant relays, Hold Orders, other equipment with redundancy which doesn't impact the BES when removed from service).
11. A relay taken out of service for 30 minutes or less, without having to take the associated high voltage equipment out of service.

Opportunity Outages (Transmission and/or Generation)

Requests made after the RC's Short-Range timeline are considered Opportunity Outages, Transmission or Generation and have the following requirements:

1. Requested a minimum of 4 business days in advance.
2. Cannot be more than one day in length, with some exceptions
3. Cannot require an Operating Plan.
4. Cannot be submitted after the OPA Lockdown window (with some exceptions.)

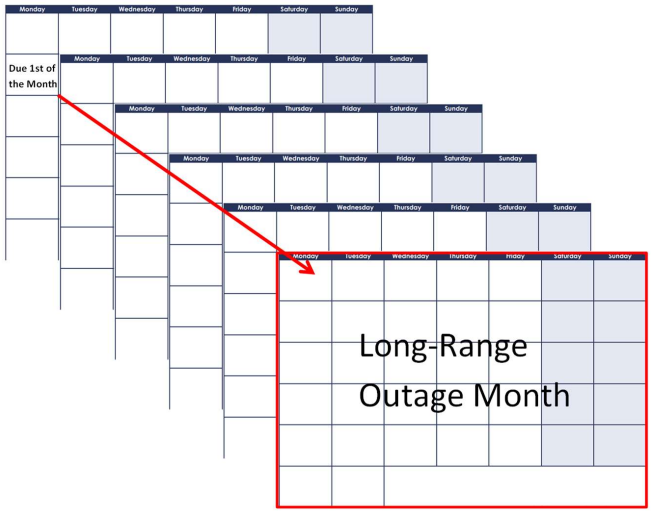
Opportunity Outages that do not meet the minimum submission timelines will be assessed and approved at the discretion of the Outage Dispatcher or the Real-Time System Dispatcher. Requests made after the OPA Lockdown time must be considered Urgent or Emergency or approved by the Real-Time Dispatcher. Requests made after the OPA lockdown must be studied or assessed by the RTSOE. The RC must also approve the outage request.

Real-time or Same Day Opportunity Outages: Must be approved by Real-Time System Dispatcher. The Real-Time System Study Engineer must perform assessment/study. The RC must approve of the outage.

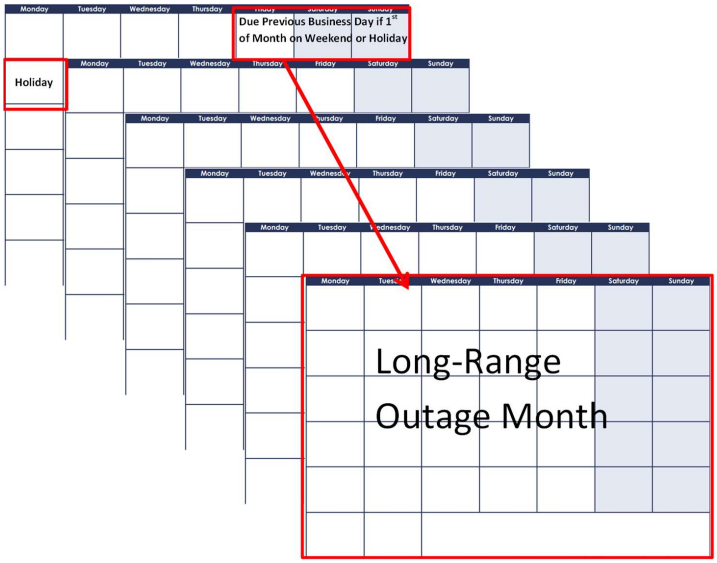
Appendix 1a - Outage Submission Timeline Examples

Long-Range Examples:

Long-Range Submission – 1st of the Month on Business Day

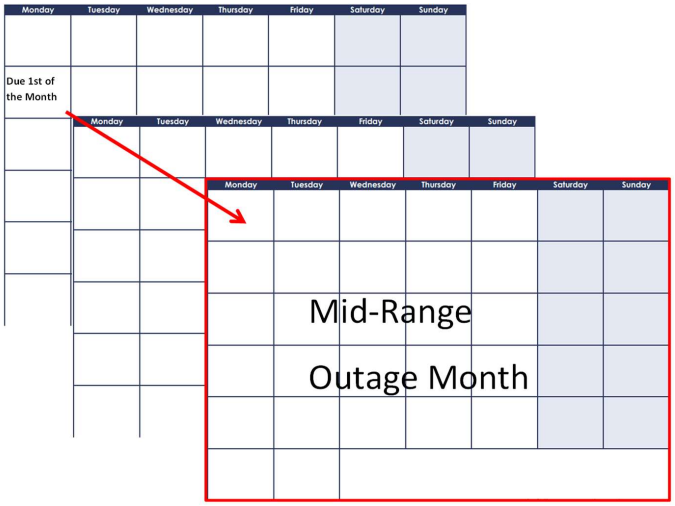


Long-Range Submission – 1st of the Month on Weekend or Holiday

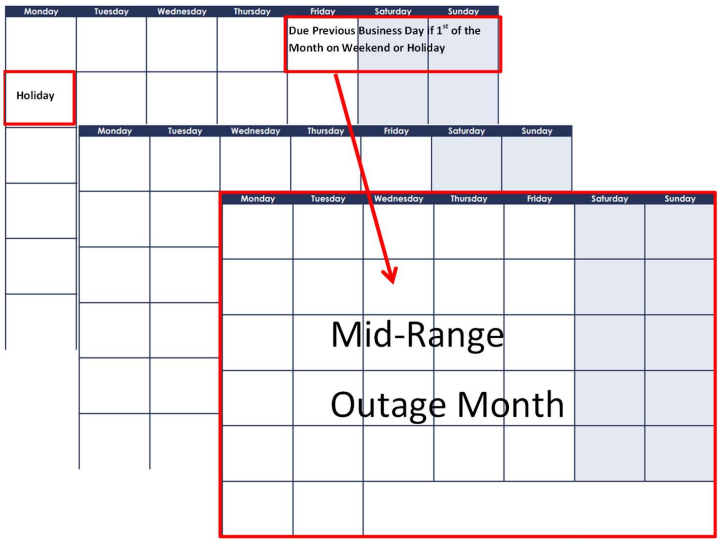


Mid-Range Examples:

Mid-Range Submission – 1st of the Month on Business Day



Mid-Range Submission – 1st of the Month on Weekend or Holiday



Short-Range Examples:

A-Range Submission – 1st of the Month on Weekend or Holiday

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Short-Range (21 day) Due						
Short-Range (14 day) Due						
	Short-Range Outage Week					

Short-Range Submission – Submission day on Holiday

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Short-Range (21 day) Due				Short-Range (14 day) Due		
Holiday						
	Short-Range Outage Week					

Appendix 2 – Equipment List (Long-Range, Mid-Range and Short-Range (21 and 14 Day) Equipment)

External parties to BPA:
The BPA Outage Policy, Appendix 2 and Appendix 5 are located in the RC West library

Additionally, BPA will send a list to Facility Operators that are external to BPA.

BPA employees:

BPA employees can access both the Appendix 2 and Appendix 5 here:

Appendix 2 and Appendix 5

Appendix 3 – Considerations in requesting outages in the Equipment List (Long-Range, Mid-Range and Short-Range (21 and 14 Day) Equipment)

Interties:

NWACI – Northwest AC Intertie (Previously COI)
ID-NW – Idaho to Northwest Intertie
MT-NW – Montana to Northwest Intertie
NI – Northern Intertie to Canada
NW-SPP – Northwest to Sierra Pacific Power Intertie
PDCI – Pacific Direct Current Intertie

Flowgates:

I-5 – Series of flowgates on I-5 corridor between Raver and Pearl substations
PA – Paul-Allston corridor
RP – Raver-Paul
SOA – South of Allston and Pearl-Keeler
SOC – South of Custer
NOEL – North of Echo Lake
~~NJD – North of John Day~~
NOH – North of Hanford
SOB – South of Boundary
WOCN – West of Cascades North
WOCS – West of Cascades South
WOJD – West of John Day
WOH – West of Hatwai
WOL – West of Lower Monumental
WOM – West of McNary
WOS – West of Slatt
CI – Columbia Injection
WI – Wanapum Injection

Other paths:

JDW – John Day Wind
RCW – Rock Creek Wind

The information below is provided to assist individuals in requesting outages for Long-Range or Mid-Range equipment. Intertie and flowgate usage is considered when developing the final outage plans. Individuals should consider the “Best times to Schedule Outages” in determining their outage plans and whether they may be able to have an outage request approved in less than Long-Range or Mid-Range time frames. This information is to be used as a guide as to the best times to take an outage of Long-Range or Mid-Range equipment: it does not automatically mean an outage request will be granted. Keep in mind that flexibility for taking outages of Long-Range or Mid-Range equipment may be available if system conditions permit. When planning outages of Long-Range or

Mid-Range equipment, consider both the identified "Best time to schedule outages" and any information under "Other considerations".

CI
Best time to schedule outages: October through March.
Other considerations: Avoid the July-August time frame, as well as peak run-off periods from mid-April through May.

NWACI (Previously COI)
Best time to schedule outages: October through April.
Other considerations: During the spring and summer months the Northwest exports heavily to California. It is conceivable for the Northwest to import heavily during winter months (November-February) during off-peak hours.

I-5 (RP, PA, and SOA)
The series of 500kV transmission lines on the westside of the Cascade mountains that extend between Raver to the north and Pearl to the south.
Best time to schedule outages: October through May before there are high north to south flows across the Northwest to serve high summer loads in California.
Other considerations: Outages that need to be taken during high north to south transfer periods should avoid the afternoon period when transfers are highest.

ID-NW
Best time to schedule outages: September through April when loads on the eastside of the WECC system are down.
Other considerations: Daily outages are preferred when outages are taken during periods of high off-peak east to west transfers.

MT-NW
Best time to schedule outages: March through ~~May~~ June for large impact outages and September through November for small impact outages~~October~~. If possible coordinate with maintenance outages of Colstrip generators which often occur in spring.
Other considerations: Daily outages are preferred when outages are taken during periods of high off-peak east to west transfers.

~~**NJD**~~
~~**Best time to schedule outages:** October through April.~~
~~**Other considerations:** During the spring run-off (April-June) and summer months (July-September) the Northwest exports heavily to California and Idaho, which is supported by **NJD**NJD. Outages that must be taken during high export conditions should avoid the higher loading period in the afternoon and early evening if possible.~~

NOH

Best time to schedule outages: October through May.
Other considerations: As spring run-off tapers off and ends (June-September), Canadian exports to California increase the NOH loading. Outages that must be taken during high NOH loading conditions should avoid the higher loading period in the afternoon and early evening if possible.

NI
Best time to schedule outages: March 15-April 30 and October 15- November 30.
Other considerations: High exports from the Northwest to Canada are typical during spring run-off conditions (April-June) in the Northwest. High imports to the Northwest from Canada are typical during summer peak load periods (July-September) after the Northwest run-off subsides.

NW-SPP
Best time to schedule outages: October through April when loads in Nevada are lower due to lower temperatures.

NW WA Area Net Load (IROL)
Best time to schedule outages: June through October outside of winter peaking conditions.
Other Considerations: The NW WA Area Net Load (IROL) is limited by imports into the greater Puget Sound Area and Olympic Peninsula. Typically, any 500/230kV Bk, 500kV shunt capacitor and/or line above 287kV in the area is considered significant to the IROL. Heavy imports occur when the load in the area is high, such as during cold snap conditions and when generation in the area is offline, such as during the spring runoff period in the spring.

PDCI
Best time to schedule outages: October through April.
Other considerations: During the spring run-off (April-June) and summer (July-September) months the Northwest exports heavily to California. It is conceivable for the Northwest to import heavily from California during off-peak conditions during the winter (November-February).

SOB
Best time to schedule outages: **August through** September for large impact outages. For Small impact outages October through November and January through February is best. ~~through March.~~
Other considerations: Heaviest flows on this path are during the spring runoff (mid-April through mid-July).
~~**Best time to schedule outages:** March 15-April 30 and October 15- November 30.~~

SOC/NOEL

Best time to schedule outages: March 15-April 30 and October 15- November 30**.**
Other considerations: Avoid scheduling outages that impact NOEL when Seattle area loads are high during the winter and also during periods of high exports to Canada which typically occur in the late spring. Outages which impact SOC should be avoided in the July to September time period when imports from Canada may be high.

WI
Best time to schedule outages: October through ~~March~~May.
Other considerations: Avoid the July-August time frame, as well as peak run-off periods from mid-April through May

WOCN
Best time to schedule outages: September and October between the peak summer and peak winter load periods.
Other considerations: Heaviest flows on this path occur during spring run-off when there are heavy exports to Canada and Westside thermal generation is displaced by hydro and winter peak load periods.

WOCS
Best time to schedule outages: The periods between winter and summer (April-May and September-October).
Other considerations: Heaviest flows on this path occur during winter peak load. Outages may also impact the COI, and PDCI~~, and NJD~~ so availability of summer outages is limited.

WOH
Best time to schedule outages: March through April before the spring run-off in western Montana and September through October when western Montana hydro has subsided and prior to winter load periods.
Other considerations: Daily outages are preferred when outages are taken during periods of high off-peak east to west transfers.

WOJD
Best time to schedule outages: Mid-September through ~~the first week of April~~November for large impact outages and November through the first week of April for small impact outages.
Other considerations: Daily outages are preferred when outages are taken during periods of high off-peak east to west transfers.

WOL
Best time to schedule outages: September through the first week of April.
Other considerations: Outages should be avoided during periods of high generation on the Lower Snake that is typically during spring run-off (April-June) and or heavy exports to California.

WOM
Best time to schedule outages: September through the first week of April.
Other considerations: Outages should be avoided during periods of high generation on the Lower Snake that is typically during spring run-off (April- June) and or heavy exports to California.

WOS
Best time to schedule outages: Mid-September through the first week of April.
Other considerations: Outages should be avoided during periods of high generation on the Lower Snake that is typically during spring run-off (April-June) and or heavy exports to California.

Tri-Cities
Best time to schedule outages: October through April.
Other considerations: No outages during the heavy loading Summer timeframe (middle of May through August).

SE Idaho
Best time to schedule outages: October through April.
Other considerations: Avoid outages that break a primary source (Hooper Springs and the three connections to Goshen 161kV) November through March.

Big Eddy 115kV Local Area
Best time to schedule outages: June through December.
Other considerations: Avoid outages that limit 115kV The Dalles generation (Big Eddy 230/115kV bank 1 and Big Eddy-The Dalles 115kV line) February through April.

Flathead
Best time to schedule outages: August through February.
Other considerations: Avoid outages March through July.

OTHER CONSIDERATIONS THAT MAY AFFECT YOUR REQUEST
• Outages that need to be taken during heavy loading conditions on a constrained path should be coordinated to minimize curtailments during the peak transmission usage period of the day.
• Take into consideration the impacts weather or fire may have on transfer capability during an outage.
• Generator outages may impact transfer capability or the ability to load a path and should be considered when planning outages.

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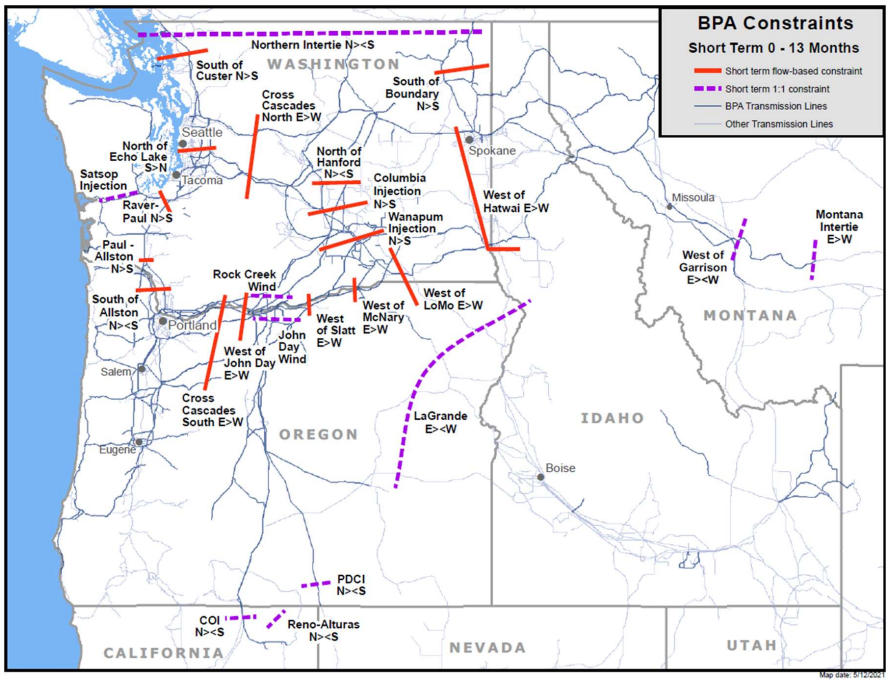
Appendix 4 – Map of NW Constrained Paths (Major Interties/Flowgates)

For outage scheduling purposes, the transmission system is divided into interties or flowgates and associated Mid-Range equipment. Appendix 3 can be used to determine the location of the major flowgates in the Bonneville service territory.



Legend:

COI – California Oregon Intertie
ID-NW – Idaho to Northwest Intertie (LaGrande)
MT-NW – Montana to Northwest Intertie (West of Garrison)
NI – Northern Intertie to Canada
NW-SPP – Northwest to Sierra Pacific Power Intertie (Reno – Alturas)
PDCI – Pacific Direct Current Intertie
CI – Columbia Injection
I-5 – Series of flowgates on I-5 corridor between Raver and Pearl substations
PA – Paul-Allston corridor
RP – Raver-Paul
SOA – South of Allston and Pearl-Keeler
SOC – South of Custer
NOEL – North of Echo Lake
~~NJD – North of John Day~~
NOH – North of Hanford
SOB – South of Boundary
WI – Wanapum Injection
WOCN – West of Cascades North
WOCS – West of Cascades South
WOJD – West of John Day
WOH – West of Hatwai

WOL – West of Lower Monumental
WOM – West of McNary
WOS – West of Slatt
Rock Creek Wind
John Day Wind

Effective:~~October 23, 2020~~May 12, 2021

Appendix 5 – Seasonal & Simultaneous 500kV Line Outage to Avoid

A matrix of 500kV lines is located on ~~Peak Reliability~~RC West's secure ~~website~~portal. Use this matrix as a guide in conjunction with information in Appendix 3 to determine the best time of the year to plan outages on 500kV lines. It can also be used to identify simultaneous outages of 500kV lines to avoid in the outage planning process.

External parties to BPA:
The BPA Outage Policy, Appendix 2 and Appendix 5 are located in the RC West Portal at rc.caiso.com.~~on Peak Reliability's secure website in the TOP-003 Library:~~

~~https://www.peakrc.org/~~

Additionally, BPA will send a list to Facility Operators that are external to BPA.

BPA employees:
The BPA Outage Policy, Appendix 2 and Appendix 5 are located on the TORO SharePoint site.

TORO SharePoint

Appendix 6 – Additional BPA Reporting Requirements

A. Applications for Clearances, Hold Orders and Work Permits for equipment affecting the operation or protection of the BPA power system shall be made with the appropriate Outage Dispatcher as far in advance as possible. See Clearances on Transmission Lines and Line Section BPA-WS-3-8 - System Operating Standards. Outage applications which do not follow WS-3-8 will be returned by the Outage Office.

   Urgent or Emergency equipment outage requests will be processed by the appropriate Dispatcher under real-time procedures.

B. Applications for Clearances and Work Permits for equipment outages which do not affect the operation or protection of the BPA power system shall be made with District Substation Operations as far in advance as possible.

   When applying for a Clearance or Work Permit, the following information is to be provided to the Outage Dispatcher or Chief Substation Operator:

   1. The correct name designation of the line or equipment desired, using System Operations numbers and designations.
   2. The date and time the work or test requiring the Clearance, or Work Permit is scheduled to begin.
   3. The anticipated duration required for the Clearance or Work Permit.
   4. The name of the person who will take the Clearance or Work Permit.
   5. The type of Clearance desired.
   6. A description of the work or test to be performed.

C. Application for Clearances and Hold Orders from foreign utilities to facilitate BPA's work in proximity to the foreign utility's equipment (VI.5G and VII.3D) shall be made as far in advance as possible.

   When applying for Clearances or Hold Orders from a foreign utility, the following information shall be provided to the Outage Dispatcher or Chief Substation Operator:

   1. The correct name designation of the line or equipment as identified by the foreign utility.
   2. The date and time the work requiring the Clearance or Hold Order is scheduled to begin.
   3. The anticipated duration for the Clearance or Hold Order.
   4. The name of the person who will take the Clearance or Hold Order.
   5. A description of the work to be performed.
   6. Whether the recipient will receive/release the Clearance or Hold Order directly through the foreign utility.
   7. Contact information of the foreign utility.

For further information on application for Clearances or Hold Orders from a foreign utility, see BPA Work Standard BPA- WS-3-5, Clearances and Hold Orders from Foreign Utilities.

D. All Craft supervisors shall keep informed of proposed/submitted/scheduled outages through the Daily Activity Record Tracking (DART). Chief Operators shall serve as consultants/coordinators for the details/possibilities/timelines of those outages. The scheduling of maintenance work must be coordinated to minimize the number of outages to BPA lines and equipment and to customers' points of delivery.

E. Outage submitters are responsible for ensuring that individuals listed as Tag Holders on the outage form are certified prior to submitting the request. Any changes to the names of the Tag Holders on an outage form will require checking the Permit Directory.