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Northwest Power Pool

Reserve Sharing Program Documentation

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NWPP Reserve Sharing Documentation

TABLE OF CONTENTS

NWPP Reserve Sharing Program

A.	INTRODUCTION AND OVERVIEW	5
B.	KEY TERMINOLOGY	6
C.	OVERVIEW OF KEY RESERVE SHARING PROGRAM ELEMENTS.....	10
C.1.	Firm-for-the-Hour Policy.....	10
C.2.	How Much Contingency Reserve a Participating Balancing Authority Must Carry (Contingency Reserve Obligation)	11
C.3.	When a Participating Balancing Authority May Deploy Contingency Reserve and Request Assistance Reserve (Qualifying Events)	11
C.4.	What a Participating Balancing Authority Must Do Before Requesting Assistance Reserve.....	11
C.5.	Where to Find Additional Information on Participant Eligibility and Obligations.....	12
D.	RESERVE REQUIREMENTS	12
D.1.	How Reserve Sharing Program Rules Relate to BAL-002	12
D.2.	Contingency Reserve Obligations and Associated Requirements Related to Spinning and Nonspinning Reserve.....	13
D.3.	Additional Policies Governing Contingency Reserve	13
E.	REQUESTING ASSISTANCE RESERVE.....	14
E.1.	Qualifying Events.....	14
E.2.	Action Required Before Requesting Assistance Reserve	15
E.3.	Timing of Requests for Assistance Reserve.....	15
E.4.	Accounting for Energy; Transmission for Delivery.....	16
E.5.	Restoring Reserves.....	16
F.	OBLIGATION TO PROVIDE ASSISTANCE RESERVE.....	16
G.	ELIGIBILITY FOR AND PARTICIPATION IN RESERVE SHARING PROGRAM.....	16
G.1.	Who Is Eligible	17



- G.2. How Eligible Entities Become Participants.....17
- H. ROLES AND RESPONSIBILITIES17
 - H.1. Participant Responsibilities.....17
 - H.2. NWPP Staff Monitoring and Reporting Responsibilities18
 - H.3. Monitoring, Backup, and Reporting Responsibilities.....18
- I. GENERAL DATA REQUIREMENTS19
 - I.1. Data Telemetered from Participating Balancing Authorities to the Reserve Sharing Computer System19
 - I.2. Additional Data from Participating Balancing Authorities with Non-Pool Interconnections20
 - I.3. Participants Responsible for WECC Data Pool Information20
 - I.4. Functions of the Reserve Sharing Computer System.....20
 - I.5. Data Telemetered from the Reserve Sharing Computer System to Participating Balancing Authorities.....22
 - I.6. Data Telemetered from the Reserve Sharing Computer System to the WECC Reliability Coordinator23
- J. DATA REQUIREMENTS RELATED TO RESERVE SHARING REQUESTS23
 - J.1. Requesting Participant24
 - J.2. Responding Participants.....24
- K. SETTLEMENT.....25
 - K.1. Settlement Data.....25
 - K.2. Declarations Concerning Settlement Method.....26
 - K.3. Financial Settlement26
 - K.4. Return Energy and Associated Transmission27
- L. TRACKING AND REPORTING28
 - L.1. NWPP RSG Verification Forms28
 - L.2. Contingency Reserve Adjustment Factor.....28
- M. RESERVE SHARING ZONES30
- N. BACKUP PROCEDURES30
- O. PROCEDURES FOR ADDRESSING ISSUES AFFECTING RESERVE SHARING PROGRAM WHEN AGENCY AGREEMENT PROCESS IS INSUFFICIENT.....30



ATTACHMENTS

Attachment A – Calculation of Contingency Reserve Obligation; Spinning and Nonspinning Reserve Requirements33

Attachment B – Qualifying Events40

Attachment C – Reserve Sharing Zone and Levels42

Attachment D – Transmission Mapping for Reserve Sharing Program45

Attachment E – Backup Procedures for Reserve Sharing Program.....57

Attachment F – Transmission Mapping and Tag Template Change Process61

Attachment G – Backup Process for ATF Reserve Sharing Tags64

Attachment H– Reserve Sharing Participants.....66

Attachment I – NERC Standard BAL-002-067

Attachment J – WECC Standard BAL-STD-002-0 – Operating Reserves.....74

Attachment K – Northwest Power Pool Reserve Sharing Group Most Severe Single Contingency Tables84

DOCUMENTATION HISTORY87

NWPP Reserve Sharing Program

A. INTRODUCTION AND OVERVIEW

Standards established by the North American Electric Reliability Corporation (NERC) and the Western Electricity Coordinating Council (WECC) require all electric balancing authorities to carry reserve for contingencies and disturbances. As permitted by NERC and WECC standards, Participating Balancing Authorities within the Northwest Power Pool (NWPP) have instituted a Reserve Sharing Program for contingency reserve.

By sharing contingency reserve, participants are entitled to use not only their own “internal” reserve resources, but to call on other participants for assistance if internal reserve does not fully cover a contingency or disturbance. Except when communication links are down or the computer system for reserve sharing is not functioning, the reserve sharing process for the NWPP is automated.

This document describes how the Reserve Sharing Program works. It covers:

- key terminology for the Reserve Sharing Program (Section B),
- an overview of the key elements of the Reserve Sharing Program (Section C),
- how much contingency reserve each participant is required to carry (Attachment A),
- what events allow participants to deploy their own contingency reserve, and, if necessary, request assistance reserve, how a participant may request assistance reserve from other participants (Attachment B and Section E),
- participants’ obligations to supply assistance reserve (Section F),
- eligibility to participate in reserve sharing and how eligible parties become participants (Section G),
- the roles and responsibilities of participants, the NWPP Staff, and others (Section H),
- general data requirements and the functions of the reserve sharing computer system (Section I),
- data requirements related to requests for assistance reserve (Section J),
- how participants settle when assistance reserve is supplied under the Reserve Sharing Program (Section K),
- tracking and reporting procedures related to the Reserve Sharing Program (Section L),
- identification of “zones” within the NWPP for delivering reserve energy, and the sequence in which assistance reserve from adjacent zones is deployed if the assistance reserve inside a given zone is insufficient to meet a contingency (Section M and Attachment C);

- backup procedures participants will use if the communication links that enable automated reserve sharing go down (Section N and Attachment E); and
- procedures for addressing issues that affect the Reserve Sharing Program when the process under the *Agreement Appointing Agent and Establishing Responsibilities Related to Reserve Sharing Group Compliance with BAL-002* is insufficient (Section O).

This document includes several attachments, some of which have been noted above. The full set of attachments and their titles are as follows:

Attachment A – Reserve Sharing Zone and Levels; Spinning and Nonspinning Reserve Requirements

Attachment B – Qualifying Events

Attachment C – Reserve Sharing Zone and Levels

Attachment D – Transmission Mapping for Reserve Sharing Program

Attachment E – Backup Procedures for Reserve Sharing Program

Attachment F – Transmission Mapping and Tag Template Change Process

Attachment G – Backup Process for After-the-Fact Reserve Sharing Tags

Attachment H – Reserve Sharing Participants

Attachment I – NERC Standard BAL-002-0 – Disturbance Control Performance

Attachment J – WECC Standard BAL-STD-002-0 – Operating Reserves

Attachment K – Northwest Power Pool Reserve Sharing Group Most Severe Single Contingency Tables

B. KEY TERMINOLOGY

The terms identified below have the meanings given to them in this document for purposes of the Reserve Sharing Program. Most terms defined by NERC or the WECC are conformed to the NERC or WECC definitions, but some terms' definitions may not be identical to those established by NERC or the WECC.

Assistance Reserve: Contingency Reserve of one Participant that is delivered to another Participant in response to a Reserve Sharing Request.

BAL-002:

- with respect to the Reserve Sharing Group, NERC standard BAL-002-0, as it may be revised, supplemented, or superseded from time to time in accordance with NERC procedures, as well as any corresponding or substantially similar standard adopted for the WECC, each of the foregoing as applicable to the Reserve Sharing Group; and
- with respect to a Participant, those provisions of the foregoing (or any substantially similar standard) applicable to the Participant by law or regulation.

Contingency Reserve: In accordance with the NERC definition, Contingency Reserve is the provision of capacity deployed by a Participating Balancing Authority to meet BAL-002-0 and other NERC and WECC contingency requirements.

Contingency Reserve Obligation: As specified in Attachment A to this document, Contingency Reserve Obligation is the minimum amount of Contingency Reserve that must be carried by a particular Participating Balancing Authority or by the Reserve Sharing Group as a whole (as the context requires) to respond to Qualifying Events. A Participating Balancing Authority's Contingency Reserve must be available for use as Internal Reserve if it experiences a Qualifying Event or to deliver as Assistance Reserve in response to a Reserve Sharing Request by another Participating Balancing Authority that has experienced a Qualifying Event. Although the formulas in Attachment A use the acronym "CRO" to designate a preliminary calculation of a Participating Balancing Authority's Contingency Reserve Obligation (before the adjustments described in Sections 1.b, c, and d) of Attachment A, the written term "Contingency Reserve Obligation" as used in this document refers to the total amount of Contingency Reserve a Participating Balancing Authority (or the Reserve Sharing Group) is required to carry, taking into account all applicable adjustments specified in Attachment A.

Disturbance: As defined by NERC, a Disturbance is:

- an unplanned event that produces an abnormal system condition;
- any perturbation to the electric system; or
- an unexpected change in Area Control Error (ACE) that is caused by the sudden failure of generation or interruption of load.

Internal Reserve: The Contingency Reserve Obligation of a Participating Balancing Authority when deployed to respond to a Qualifying Event on the Participating Balancing Authority's own system (as opposed to Contingency Reserve delivered as Assistance Reserve to another Participating Balancing Authority).

Load Responsibility: Load Responsibility means, with respect to the Reserve Sharing Group as a whole or a Participating Balancing Authority (as the context requires):

- system or area firm load demand,
plus
- any firm exports, unless reserve capacity is provided by the receiving balancing authority,
minus
- any firm imports for which reserve capacity is provided by the source balancing authority.

The Load Responsibility for the Reserve Sharing Group as a whole is the sum of all Participating Balancing Authorities' individually calculated Load Responsibilities.

Most Severe Single Contingency: The Single Contingency that would result in the greatest loss (measured in MW) of generation output serving Load Responsibility of the Reserve Sharing Group (or Participating Balancing Authority, as the context requires).

Nonspinning Reserve: In accordance with WECC Standard BAL-STD-002-0, Nonspinning Reserve is Operating Reserve that need not be connected to the system but must be capable of serving demand within 10 minutes, or interruptible load that can be removed from the system within 10 minutes.

North American Electric Reliability Corporation (NERC): A self-regulatory nonprofit organization, subject to oversight by the U.S. Federal Energy Regulatory Commission and governmental authorities in Canada, whose mission is to ensure the reliability of the bulk power system in North America. NERC develops and enforces reliability standards, assesses reliability annually via 10-year and seasonal forecasts, monitors the bulk power system, and educates trains, and certifies industry personnel.

Northwest Power Pool (NWPP): The geographic area encompassed by the electric systems of the NWPP Agreement Signatories. As described in the NWPP Agreement, this area includes the states of Washington, Oregon, Idaho, Montana, Utah, and Wyoming; portions of northern California and northern Nevada; and the Canadian provinces of British Columbia and Alberta. There is also a separate corporation named "Northwest Power Pool," which provides staffing and other resources to support implementation of the NWPP Agreement. In general, when this document refers to the Northwest Power Pool or the NWPP, it is referring to the geographic area and the associated electric power systems of the NWPP Agreement Signatories.

NWPP Agreement: A multilateral agreement to promote cooperation among participating organizations to achieve reliable operation, coordinate generation operation and power system planning, and assist in planning of transmission within the NWPP area.



NWPP Agreement Signatory (Signatory): An entity that is a party to the NWPP Agreement.

NWPP Staff: The employees of the Northwest Power Pool Corporation.

Operating Committee: A committee created under the NWPP Agreement to foster coordination among electric utilities operating in the NWPP area with the goal of collectively achieving reliable operation.

Operating Reserve: As defined by NERC, Operating Reserve is capability above firm system demand required to provide for regulation, load-forecasting error, equipment forced and scheduled outages, and local area protection. Operating Reserve consists of Spinning Reserve and Nonspinning Reserve.

Participant: An entity that is eligible to participate in the Reserve Sharing Program (as specified in Section G.1 below) and that has provided any required notice of its intent to participate in the Reserve Sharing Program. Attachment H contains a list of current Participants.

Participating Balancing Authority: An entity that operates a balancing authority (as defined by NERC) and has become a Participant in the Reserve Sharing Program. References in this document to “balancing authority” (when not part of the term “Participating Balancing Authority”) are to the term as defined by NERC.

Qualifying Event: Those events designated in Attachment B of this document as Qualifying Events.

Reportable Disturbance:

- A Disturbance within the NWPP that causes a change in ACE for the NWPP equal to or exceeding 35% of the NWPP’s Most Severe Single Contingency; or
- for a Participant that does not monitor (or at the time of the relevant event is not monitoring) the Most Severe Single Contingency for the NWPP, a Disturbance that causes a change in the Participant’s ACE that equals or exceeds 190 MW.

Participants’ obligations to submit NWPP RSG Verification forms to NWPP Staff for purposes of the Reserve Sharing Program are based on this definition of Reportable Disturbance (with certain additional requirements as described in Section L.1). The Northwest Power Pool Corporation, in its capacity as agent for the Reserve Sharing Group, is responsible for submitting periodic reports to the WECC and NERC in accordance with their requirements.

Reserve Sharing Computer System: The software and hardware used for automated reserve sharing under the Reserve Sharing Program.



Reserve Sharing Group: The group composed of all Participants, collectively.

Reserve Sharing Program: The procedures, data, computer programs, and related information and requirements described in this document that enable Participants to request and provide Assistance Reserve as needed to respond to Qualifying Events.

Reserve Sharing Request: A request by Participating Balancing Authority that has satisfied the conditions specified in Section E.2 for delivery of Assistance Reserve.

Reserve Sharing Zone: A zone encompassing the balancing authority area(s) of a Participating Balancing Authority (or a group of Participating Balancing Authorities) that is separated from the balancing authority area(s) of remaining Participants by a constrained transmission path. Attachment C to this document identifies the Reserve Sharing Zones that have been established for the Reserve Sharing Program, together with the sequence through which Assistance Reserve is deployed for each Reserve Sharing Zone.

RSG Committee: The committee established pursuant to Section 5.2.3 of the NWPP Agreement.

Single Contingency: An event designated as “Category B” in Table 1 of NERC Standard TPL-002-0.

Spinning Reserve: As defined by NERC, Spinning Reserve is unloaded generation that is synchronized and ready to serve additional demand. For purposes of the Reserve Sharing Program, Spinning Reserve must also respond automatically to changes in frequency.

Western Electricity Coordinating Council (WECC): A nonprofit corporation responsible for coordinating and promoting bulk electric system reliability in the Western Interconnection. The WECC also assures open and non-discriminatory transmission access among members, provides a forum for resolving transmission access disputes, and provides an environment for coordinating the operating and planning activities of its members.

C. OVERVIEW OF KEY RESERVE SHARING PROGRAM ELEMENTS

C.1. Firm-for-the-Hour Policy

The definition and policy for “firm for the hour” energy schedules as set forth below are intended to clarify which parties are responsible for carrying Operating Reserve for interchange schedules between Participants.

a. Definitions

Firm for the Hour: Any energy schedule for “firm” energy for a given hour will be included in the Load Responsibility for the Participating Balancing Authority that is the source for the schedule.

Interruptible Schedule: Any energy schedule for “interruptible” energy for a given hour refers to an energy schedule that can be curtailed at any time for any reason. (The term “interruptible” for purposes of the Reserve Sharing Program is not synonymous with common industry vernacular such as non-firm or unit contingent.)

b. Policy

Beginning 10 minutes before the start of the generation ramp for a specified hour, energy schedules between Participating Balancing Authorities will be treated as “firm for the hour” except for any energy schedule that has been explicitly identified as an interruptible schedule. Both the source and sink balancing authorities must have accurate information concerning which energy schedules are interruptible and which are firm for the hour. All energy schedules are subject to curtailment when necessary to preserve system reliability.

All Participating Balancing Authorities are responsible for making sure that all market participants from whom they receive energy schedules are aware of the definitions and policy set forth above concerning interruptible and firm-for-the-hour schedules.

C.2. How Much Contingency Reserve a Participating Balancing Authority Must Carry (Contingency Reserve Obligation)

The processes for calculating how much Contingency Reserve each Participating Balancing Authority must carry, and the Contingency Reserve Obligation for the Reserve Sharing Group as a whole, are set forth in Attachment A to this document.

C.3. When a Participating Balancing Authority May Deploy Contingency Reserve and Request Assistance Reserve (Qualifying Events)

A Participating Balancing Authority must experience a “Qualifying Event” before it is entitled to deploy its Internal Reserve or request Assistance Reserve. The definition of Qualifying Event is set forth in Attachment B to this document.

C.4. What a Participating Balancing Authority Must Do Before Requesting Assistance Reserve

Briefly stated, a Participating Balancing Authority must fully commit its Internal Reserve before requesting Assistance Reserve to respond to a Qualifying Event. This requirement is more fully explained in Section E.2 of this document. There are also requirements concerning the timing and duration of Assistance Reserve Sharing Requests, which are set forth in Section E.3.

C.5. Where to Find Additional Information on Participant Eligibility and Obligations

Eligibility

Provisions governing eligibility to participate in the Reserve Sharing Program are in Section G of this document.

Data Obligations

Section I contains information on the data requirements for the general operation of the Reserve Sharing Program, as well the functions of the Reserve Sharing Computer System. Section J describes data requirements for making and responding to Reserve Sharing Requests.

Providing Assistance Reserve

Participants' obligations to provide Assistance Reserve are explained in Section F.

Restoring Contingency Reserve Following Deployment

Section E.5 describes Participants' obligations to restore their Contingency Reserve following deployment (either as Internal Reserve or Assistance Reserve).

D. RESERVE REQUIREMENTS

D.1. How Reserve Sharing Program Rules Relate to BAL-002

The Reserve Sharing Program is intended to enable the Reserve Sharing Group to comply with BAL-002, as well as certain additional rules the Reserve Sharing Group has elected to adopt for itself.

Participants are required at all times to meet the requirements of BAL-002, as revised, supplemented, or superseded from time to time in accordance with applicable NERC, WECC, or regulatory procedures. BAL-002 constitutes the foundation on which the Reserve Sharing Group rules are built. Compliance with the Reserve Sharing Group rules for Contingency Reserve is intended to ensure compliance with the BAL-002 (limited, however, to the Contingency Reserve component WECC Standard BAL-STD-002-0), but cannot serve to excuse any compliance failure related to the NERC or WECC standards.

NERC Standard BAL-002-0 (included as Attachment I) requires balancing authorities (or reserve sharing groups) to carry at least enough Contingency Reserve to cover their Most Severe Single Contingency and to recover from 100% of Reportable Disturbances within the required recovery period (subject to certain exceptions for events that exceed the relevant Most Severe Single Contingency). NERC Standard BAL-002-0 compliance measures deal only with recovery from Disturbances.

WECC Standard BAL-STD-002-0 governs Operating Reserve, which encompasses not only Contingency Reserve, but also "Regulating Reserve" and any "additional reserve" required to cover interruptible imports and on-demand obligations. The Reserve Sharing Program deals

solely with Contingency Reserve. The Reserve Sharing Program does not provide for the sharing or the reporting of either Regulating Reserve or any additional reserve for interruptible imports and on-demand obligations. Participants are individually responsible for any compliance and reporting obligations related to the portions of WECC Standard BAL-STD-002-0 that address Regulating Reserve and reserve obligations for interruptible imports and on-demand obligations.

D.2. Contingency Reserve Obligations and Associated Requirements Related to Spinning and Nonspinning Reserve.

Section 1 of Attachment A to this document provides a detailed explanation of how to calculate the Contingency Reserve Obligation for each Participating Balancing Authority. Section 2 of Attachment A explains the manner in which the Participating Balancing Authorities' Contingency Reserve Obligations are combined to yield an aggregate obligation for the Reserve Sharing Group. Section 3 of Attachment A specifies what portion of Participating Balancing Authorities' Contingency Reserve Obligations must be carried as Spinning Reserve, as well as permitted sources of Nonspinning Reserve.

D.3. Additional Policies Governing Contingency Reserve

a. No Double Counting

As expressed in the policies of the RSG Committee, multiple Participants may not count the same portion of resource capacity (*e.g.*, reserves from jointly owned generation) toward any portion of their Contingency Reserve Obligations, and the Reserve Sharing Computer System does not permit this.

b. Availability of Contingency Reserve

Contingency Reserve must be available at all times for use as Internal Reserve or Assistance Reserve. All Participants must continually calculate their Internal Reserve so that they know, at all times, how much Contingency Reserve they have available in the next 10 minutes. All Contingency Reserve must be fully deployable within 10 minutes (but this does not diminish requirements applicable to portions of Contingency Reserve that must be carried as Spinning Reserve).

c. Purchased Power

To provide flexibility in recovering from a Qualifying Event, any Participant may use power purchased from another Participant (or another supplier) to meet its Contingency Reserve Obligation in lieu of shedding interruptible load or starting combustion turbines. Any Participant that uses purchased power for recovery must report the source balancing authority(s) of the purchased power, the time the power was purchased,

and the start time for the mutually agreed-upon ramp. The NWPP Staff will be responsible for determining whether Participants providing purchased power recovered Area Control Error (ACE) so that the Reserve Sharing Group has complied with BAL-002. The requesting Participant must also arrange for transmission for delivery of the power. If the balancing authority from which the power was purchased is not a Participant in the Reserve Sharing Program, then the “four-minute rule” (as described in Section E.3) does not apply. Therefore, if the requesting Participant does not recover ACE quickly enough to meet BAL-002, it will be evaluated individually with respect to any related compliance obligations or consequences.

d. Aggregate Contingency Reserve

The aggregate Contingency Reserve for the Reserve Sharing Group must at all times exceed the Reserve Sharing Group’s Most Severe Single Contingency.

e. RSG Committee Responsibilities; Monitoring and Follow-Up

The RSG Committee is responsible for developing guidelines and arranging for periodic reporting of Contingency Reserve available within the Reserve Sharing Group. The RSG Committee will review at each of its meetings (and in any event no less than once a year) the Reserve Sharing Group’s Most Severe Single Contingency to ensure that the Most Severe Single Contingency table in Attachment K is up to date and complies with applicable NERC and WECC requirements. NWPP staff monitors Participants’ compliance with Contingency Reserve Obligations. The RSG Committee is responsible for addressing problems with deficient or poorly performing Participants, for developing remedies and proposed solutions, and for identifying and implementing any follow-up actions.

E. REQUESTING ASSISTANCE RESERVE

E.1. Qualifying Events

The Qualifying Events that permit Participants to deploy Internal Reserve, and, if the conditions specified in Section E.2 are satisfied, request Assistance Reserve, are specified in Attachment B to this document.

E.2. Action Required Before Requesting Assistance Reserve

If a Participant experiences a Qualifying Event, that Participant (the requesting Participant) is entitled to request and schedule Assistance Reserve (if necessary to fully recover from the Qualifying Event) through the Reserve Sharing Program **only** after the requesting Participant has made commitments to use an amount of Internal Reserve that equals or exceeds the requesting Participant's Contingency Reserve Obligation. At the time of the Participant's request for Assistance Reserve, the fulfillment of the Participant's obligation to fully commit its Contingency Reserve Obligation will be evaluated taking into account any Internal Reserve lost because of the Qualifying Event (such as the loss of a generator on which reserve was being carried). If the Qualifying Event caused the loss of a generating unit that was carrying Contingency Reserve, the amount of Contingency Reserve carried by that unit will be considered deployed and added to the used Contingency Reserve reported.

The requesting Participant, after committing to fully deploy its Contingency Reserve Obligation, has the option to use any additional Internal Reserve it may have at its disposal, including:

1. interruptible exports,
2. interruptible loads,
3. on-demand rights from other systems,
4. Spinning Reserve beyond the amount required for Regulating Reserve, and
5. off-line generation, including combustion turbines.

E.3. Timing of Requests for Assistance Reserve

After experiencing a Qualifying Event and fulfilling the conditions specified in Section E.2, a Participant that requires Assistance Reserve may submit a Reserve Sharing Request, but must do so within 60 minutes following the start of the Qualifying Event. Reserve Sharing Requests must be made in whole MWs (and cannot be for less than one MW). A Participant may not rely on Assistance Reserve for longer than 60 minutes from the start of the Qualifying Event. The Participant that has requested Assistance Reserve must terminate its request so as to relinquish the responding Participants' Contingency Reserve within 60 minutes following the start of the Qualifying Event.

Although the Reserve Sharing Program allows up to 60 minutes for Reserve Sharing Requests, a Participant that has experienced a Qualifying Event has a maximum of four minutes between the start of the Qualifying Event and requesting Assistance Reserve if it wishes related compliance evaluation to apply to the Reserve Sharing Group as a whole, rather than to it as an individual balancing authority. The purpose of this policy is to allow for possible ACE deviations experienced by responding Participants as they deploy their Assistance Reserve, so that they have sufficient time to recover from any ACE deviation(s) they may experience within the applicable NERC-specified recovery period.

E.4. Accounting for Energy; Transmission for Delivery

Any Participant that requests Assistance Reserve must complete a NWPP RSG Verification Form and must account for scheduled receipt and delivery of Assistance Reserve energy as “Contingency Reserve.”

The delivery of Assistance Reserve is exempt from any costs or charges associated with transmission wheeling or losses. The Reserve Sharing Computer System builds in sufficient transmission capacity for delivering Assistance Reserve. There may be incremental transmission usage between some Reserve Sharing Zones, but this usage is effectively limited in real-time up to the current System Operating Limit (SOL) of the transmission path. Participants in the Reserve Sharing Program recognize the regional benefits associated with the Reserve Sharing Program and have agreed to waive any rights to financial settlement for any transmission needed to deliver Assistance Reserve to other Participants.

E.5. Restoring Reserves

If a Participant uses Contingency Reserve in response to a Qualifying Event (whether use is limited to Internal Reserve or requires additional Assistance Reserve), the Participant should take appropriate action to restore Contingency Reserve on its system as promptly as practicable. Time to restore Contingency Reserve may not exceed 60 minutes (measured from the start of the initiating event).

F. OBLIGATION TO PROVIDE ASSISTANCE RESERVE

Each Participant is obligated to deliver Assistance Reserve in response to valid Reserve Sharing Requests up to the full amount of its Contingency Reserve Obligation (after deducting for any capacity that has been deployed to respond to any Qualifying Events). No Participant is required to make Assistance Reserve deliveries that exceed its individual Contingency Reserve Obligation, but a responding Participant must shed interruptible load or start combustion turbines (or both) to provide Assistance Reserve if these actions are necessary to satisfy its own Contingency Reserve Obligation.

G. ELIGIBILITY FOR AND PARTICIPATION IN RESERVE SHARING PROGRAM

The Reserve Sharing Program is open to operating entities that

- are NWPP Agreement Signatories, and
- meet the eligibility conditions specified below (Section G.1), and provide appropriate notice (if required) to the RSG Committee indicating a desire to participate in the Reserve Sharing Program and agreement to abide by the procedures in this document.

G.1. Who Is Eligible

All balancing authorities that elect to become NWPP Agreement Signatories must participate in the Reserve Sharing Program. Other entities may become Participants if they meet all of the following qualifications:

- a. The entity is a member of the Operating Committee.
- b. The entity has operational control over generation that automatically responds to frequency when online.
- c. The entity's generation that is to be included in the Reserve Sharing Program is within the metered boundaries of one or more Participating Balancing Authorities.
- d. The entity has an agreement or other arrangement with the Participating Balancing Authority in which the generation is located that specifies how the entity will coordinate with the balancing authority to participate in the Reserve Sharing Program.
- e. The entity is able and willing to reciprocate the receipt of Assistance Reserve by delivering Assistance Reserve to other Participants.
- f. The entity's generation resource is isolated from its load following the loss of one or more transmission lines/elements.

G.2. How Eligible Entities Become Participants

If an entity that is not a balancing authority meets the criteria specified in Section G.1 above, then the entity may become a Participant in the Reserve Sharing Program by notifying the RSG Committee (specifying the date on which the entity wishes to begin participating in the Reserve Sharing Program). A Participant must provide any documentation or other information reasonably requested by the RSG Committee to enable the RSG Committee to verify that the entity has satisfied the criteria specified in Section G.1.

H. ROLES AND RESPONSIBILITIES

H.1. Participant Responsibilities

Participants are responsible for abiding by the Reserve Sharing Group rules specified in this document, together with any corresponding policies adopted by the RSG Committee. These include requirements to meet Contingency Reserve Obligations, to provide Assistance Reserve when requested by another Participant, and to settle for deliveries of Assistance Reserve energy as provided in Section K.

Participants must also provide and receive data for the Reserve Sharing Program in accordance with Section I for general operation of the Reserve Sharing Program and Section J for making and responding to requests for Assistance Reserve.

H.2. NWPP Staff Monitoring and Reporting Responsibilities

The NWPP Staff is responsible for monitoring Participants' compliance with Contingency Reserve Obligations. The RSG Committee is responsible for addressing problems related to Participant deficiencies or poor performance, for developing remedies and presenting proposed solutions, and for identifying and implementing any follow-up actions. The RSG Committee is also responsible for developing guidelines and arranging for periodic reports on Contingency Reserve available within the NWPP as a whole.

The NWPP Staff is responsible for receiving NWPP RSG Verification Forms from Participants that have made Reserve Sharing Requests under the Reserve Sharing Program. The NWPP Staff also computes any Contingency Reserve Adjustment Factors (described in Section L.2) and submits them to the WECC and NERC.

Subject to appropriate confidentiality and use restrictions (as determined by the NWPP Staff), the NWPP Staff may make available, to a Participant hosting implementation of an Area Control Error (ACE) Diversity Interchange arrangement, data related to the Reserve Sharing Program for the purpose of enabling the hosting Participant to harmonize the operation of the Reserve Sharing Program and the implementation of the ACE Diversity Interchange arrangement.

H.3. Monitoring, Backup, and Reporting Responsibilities

NWPP Staff is responsible for monitoring and assisting in the implementation of the Reserve Sharing Program. Although Participants are responsible for telemetering data to the Reserve Sharing Computer System as described in Sections I.1, I.2, and I.3, if NWPP Staff notices missing information, NWPP Staff follows up with the affected Participants.

In addition, the Participating Balancing Authorities are responsible to monitor the NWPP RSG "heartbeat" (as explained in Section I.1.k). If any Participating Balancing Authority discovers the NWPP RSG heartbeat is inactive for a period of 10 minutes, that Participating Balancing Authority will contact the NWPP Staff (503.445.1079, or 503.445.1076, or 503.445.1074) if it is during normal business hours. Outside of normal business hours Participating Balancing Authorities should contact an adjacent Participating Balancing Authority to confirm this is a system-wide problem and not just a problem with their system or communication link.

If a Participating Balancing Authority's heartbeat appears to be inactive at the time it needs to make a Reserve Sharing Request, it should initiate the Reserve Sharing Request as described in Attachment E – *Backup Procedures for Reserve Sharing Program*.

During normal business hours the NWPP Staff can review that status of each of the individual Participating Balancing Authorities' heartbeats. If a NWPP Staff member discovers a Participating Balancing Authority heartbeat is inactive, he or she will follow up with the affected Participating Balancing Authority, and document any findings by e-mail to all Participating Balancing Authorities.

It is all Participating Balancing Authorities' responsibility to inform all other Participating Balancing Authorities and the NWPP Staff if they have discovered a problem. In addition, Participating Balancing Authorities should e-mail questions or issues to nwpprsg@nwpp.org. NWPP Staff will respond as soon as possible.

I. GENERAL DATA REQUIREMENTS

This section describes data responsibilities for Participants in the Reserve Sharing Program. Although in general all required data are relayed automatically to the Reserve Sharing Computer System, all Participants must also have the capability to enter data manually if communications between Participating Balancing Authorities and the Reserve Sharing Computer System are interrupted.

I.1. Data Telemetered from Participating Balancing Authorities to the Reserve Sharing Computer System

Each Participating Balancing Authority must telemeter the following data to the Reserve Sharing Computer System:

- a. the amount of its Contingency Reserve Obligation (CRO_{CA}) excluding any NERC Contingency Reserve Adjustment Factor (CRAF),
- b. total Spinning Reserve available from Contingency Reserve ($TotCSR_{CA}$),
- c. total Contingency Reserve available ($TotCR_{CA}$) in the next 10 minutes for use as Internal Reserve or Assistance Reserve (does not include Regulating Reserve),
- d. any Contingency Reserve already in use ($UsedCR_{CA}$),
- e. its raw ACE (ACE_{raw}), after taking into account corrections for telemetry errors, etc.,
- f. its Most Severe Single Contingency ($MSSC_{CA}$),
- g. its Reserve Sharing Request dynamic schedule ($RSReq_{CA}$),
- h. request for Reserve Sharing Status Indication ($RSReq_Confirmd_{CA}$)
No Request = Status Open
Assistance Requested = Status Closed,
- i. reserve sharing response ($RSResp$),
- j. indication (manually entered) of availability to provide Assistance Reserve (Participating Balancing Authorities not available to provide Assistance Reserve can still receive Assistance Reserve) ($BA_Participate$)
Cannot Provide Assistance Reserve = Status Open

Can Provide Assistance Reserve = Status Closed,

- k. status of the communications links that enable it to participate in the Reserve Sharing Program on an automated basis, also known as its “heartbeat” (signaled by continuing changes to indicator data, which the Reserve Sharing Computer System monitors at 10-second intervals; if there is no change to the data for a period of 60 seconds, the Participating Balancing Authority is presumed to be in non-participating status; when the indicator data begin to change again, the Participating Balancing Authority is presumed to have returned to participating status) (BA_heart_beat), and
- l. for any Participating Balancing Authority with variable bias, its frequency bias setting.

I.2. Additional Data from Participating Balancing Authorities with Non-Pool Interconnections

Participating Balancing Authorities with interconnections to adjacent systems that are not part of the NWPP must provide additional information to the Reserve Sharing Computer System as follows:

- a. net actual non-pool interchange (non-pool I_a), and
- b. net schedule non-pool interchange (non-pool I_s).

I.3. Participants Responsible for WECC Data Pool Information

Participants (balancing authorities or transmission operators) that are responsible for WECC Data Pool information to support the Reserve Sharing Program must telemeter to the Reserve Sharing Computer System actual flow ($ACTUAL_{PATH_{nn}}$), scheduled flow ($SCHED_{PATH_{nn}}$) and transfer limit ($LIMIT_{PATH_{nn}}$) for each direction of flow for the following constrained paths:

- a. Path 1 AESO-BCHA,
- b. Path 3 TOTAL PNW-BCHA,
- c. Path 14 IPCO-PNW (west to east), or Brownlee East + Hemmingway-Summer Lake (west to east), Path 14 IPCO-PNW (east to west),
- d. Path 20 Path C IPCO-PACE (north to south), and
- e. Path 66 California-Oregon Intertie (north to south)
- f. Path 16, Hemmingway-Humboldt (north-to-south)

I.4 Functions of the Reserve Sharing Computer System

Except when communications links or the necessary computer capabilities are down, the Reserve Sharing Computer System performs the tasks listed below. NWPP Staff is able to monitor the Reserve Sharing Computer System and receive all Participants’ data described in Sections I.1, I.2, and I.3. If NWPP Staff notices that there is missing information, NWPP Staff will consult

directly with the Participating Balancing Authority (ies) for which information is missing to make any necessary corrections.

- a. Determine the Most Severe Single Contingency for the NWPP as a whole ($MSSC_{NWPP}$).
- b. Determine the Contingency Reserve Obligation for the NWPP as a whole (CRO_{NWPP}) to ensure that the Contingency Reserve within the Reserve Sharing Program is sufficient to cover the $MSSC_{NWPP}$.
- c. Maintain a pro rata allocation of Adjusted Contingency Reserve Obligation ($AdjCRO_{CA}$, as defined in Section L.2 and computed in accordance with Section 1.b of Attachment A) within each Reserve Sharing Zone at any time the CRO_{NWPP} is deficient.
- d. In calculating any potential need to carry additional Contingency Reserve within a Reserve Sharing Zone, take into account path transfer limits ($LIMIT_{Pathnn}$), actual path flows ($ACTUAL_{Pathnn}$), and, where applicable, scheduled path flows ($SCHED_{Pathnn}$). With respect to Path 66 (California-Oregon Intertie), this also reflects limits on ownership rights.
- e. Maintain a pro rata allocation of the Reserve Sharing delivery dynamic schedule based upon each Participating Balancing Authority's CRO_{CA} relative to the CRO_{NWPP} .
- f. Upon receipt of a Reserve Sharing Request dynamic schedule from a Participating Balancing Authority that is requesting Assistance Reserve, validate and activate the pro rata sharing signal to all other Participating Balancing Authorities.
- g. Whenever Assistance Reserve is being delivered across Reserve Sharing Zones, continue to monitor actual path flows ($ACTUAL_{Pathnn}$) in comparison to path transfer limits ($LIMIT_{Pathnn}$), and, to the extent actual flows fall below transfer limits, allow deliveries to increase if needed to fully respond to the Reserve Sharing Request.
- h. Terminate any Reserve Sharing Request dynamic schedule once its duration exceeds 60 minutes from the time of the initiating event.
- i. Maintain hourly integrated Reserve Sharing Request dynamic schedules from each Participating Balancing Authority.
- j. Calculate a NWPP ACE¹,

Where,

$$ACE_{NWPP} = (\text{non-pool } I_a - \text{non-pool } I_s) - 10\beta_{NWPP}(F_a - F_s).$$

¹ ACE is as defined in the NERC Glossary of Terms Used in Reliability Standards.

I.5. Data Telemetered from the Reserve Sharing Computer System to Participating Balancing Authorities

The Reserve Sharing Computer System telemeters to each Participating Balancing Authority:

- a. Reserve Sharing Delivery dynamic schedule (RSDel) for Participating Balancing Authority with available Contingency Reserve:²

$$RSDel_{CA(Level\ 1)} = RSReq_{CA} * [(TotCRO_{CA} - UsedCRO_{CA}) / \Sigma TotCRO_{CA(Level\ 1)}]$$

Where,

$$RSReq_{CA} \leq MW_{LOSS} - TotCRO_{CA}$$

- If $\Sigma RSDel_{CA(Level\ 1)} < RSReq_{CA}$, then

$$RSReq_{Short} = RSReq_{CA} - \Sigma RSDel_{CA(Level\ 1)}$$

and,

$$RSDel_{CA(Level\ 2)} = RSReq_{Short}$$

- If the amount of Assistance Reserve that can be delivered from the Participating Balancing Authorities at Level 2 is insufficient to meet whatever portion of the Reserve Sharing Request remains after deliveries from Balancing Authorities at Level 1, the process is repeated as described above for Level 3, and, if applicable, Level 4.
- If there are multiple requests for Assistance Reserve, the $RSDel_{CA}$ would be calculated to reflect the sum of all amounts to be delivered as Assistance Reserve to requesting Balancing Authorities, but the Reserve Sharing Computer System separately tracks the amounts to be delivered to each of the requesting Balancing Authorities (so that payment and return energy obligations can be properly determined).
- Requests for Assistance Reserve are not allowed to exceed the Contingency Reserve Obligation for the Reserve Sharing Group as a whole.
- Transmission constraints are included the Reserve Sharing Computer System's calculation of how much Assistance Reserve can be delivered from each Level for each Reserve Sharing Zone, and so do not need to be separately computed and applied.

- b. Delivery of Reserve Sharing Confirmation Flag ($RSDel_Confirmd_{CA}$),

No Request = Status Open

Assistance Requested = Status Closed

² (All “CA” designations in these formulas, except for in “ $RSReq_{CA}$,” and “ $TotCRO_{CA}$,” refer to the Participating Balancing Authority providing Assistance Reserve. References to “Levels” are to the Levels related to the Reserve Sharing Zones, as identified in Attachment A.)

- c. Reserve Sharing time remaining for the requesting Balancing Authority from the most recent request for Assistance Reserve (TimeLeft)
- d. Number of active Reserve Sharing Requests (RSAct)
- e. Pool-Wide ACE (ACE_{NWPP})
- f. Reportable Disturbance Threshold (RpDist)

Where,

$$RpDist = .35 * MSSC_{NWPP}$$

- g. Total number of minutes remaining since the most recent request for the NWPP (RSTimRem)
- h. The indication that the Reserve Sharing Computer System and associated communication links are operational is also known as the NWPP RSG “heartbeat.”
- i. When activity on the Reserve Sharing Computer System is due to testing rather than power system conditions, this is indicated by a testing flag. NWPP Staff will arrange for this flag to be set while testing is underway, which may include helping a Participating Balancing Authority test its system(s). (The Reserve Sharing Program is fully operational while testing is in progress and Reserve Sharing Requests may be made normally. If there is a Reserve Sharing Request during testing, the test will be terminated.)

I.6. Data Telemetered from the Reserve Sharing Computer System to the WECC Reliability Coordinator

The Reserve Sharing Computer System telemeters to the WECC reliability coordinator offices the following data every 10 seconds:

- a. The MSSC for the Reserve Sharing Group as a whole ($MSSC_{NWPP}$),
- b. The Contingency Reserve Obligation for the Reserve Sharing Group as a whole, (CRO_{NWPP}), and
- c. The Contingency Reserve available for the Reserve Sharing Group as a whole ($TotCR_{NWPP}$).

J. DATA REQUIREMENTS RELATED TO RESERVE SHARING REQUESTS

The general data requirements for Participants in the Reserve Sharing Program are described in Section I. The provisions below explain the steps for making and responding to Reserve Sharing Requests.

J.1. Requesting Participant

- a. A Participant that has met the conditions to make a Reserve Sharing Request (as described in Section E.2) must calculate the amount of Assistance Reserve for which it is eligible, enter the deficient amount needed into a Reserve Sharing Request dynamic schedule, and send the request, at a zero ramp span time, to the Reserve Sharing Computer System.

Where,

$$RSReq_{CA} \leq MW_{LOSS} - (CRO_{CA} + AdjCRO_{CA}) * CRAF_{CA},$$

$$RqstRSSI = 1.$$

- b. At this point in time, the Participant's anticipated CR_{CA} should be at or below zero.

$$(CRO_{CA} + AdjCRO_{CA}) * CRAF_{CA} - UsedCR_{CA} \leq 0$$

- c. Requesting Participants are expected to restore their Contingency Reserve availability as promptly as practicable, but in no event longer than 60 minutes from the initiating event.
- d. The Reserve Sharing Computer System will remove the Reserve Sharing Request dynamic schedule when its use is no longer needed, but in no event longer than 65 minutes following the initiating event.

$RSReq_{CA} = 0$, ten-minute ramp to zero beginning at 55 minutes after the request first started.

$$RqstRSSI = 0$$

- e. If during the request the Requesting Participant detects a Reserve Sharing Computer System failure, it should assume that the Responding Participants will continue to deliver reserves for the full 65 minutes as called for in J.1.d.

J.2. Responding Participants

- a. Responding Participants should initiate a response to a Reserve Sharing Delivery dynamic schedule from the Reserve Sharing Computer System by including $RSDel_{CA}$ in their ACE equation shown below. A security check on the Reserve Sharing Request dynamic schedule includes a crosscheck such that Reserve Sharing Status Indication = 1. The sign of the $RSDel_{CA}$ is negative for Participating Balancing Authorities requesting Assistance Reserve. The sign of the $RSDel_{CA}$ is positive for Participating Balancing Authorities providing Assistance Reserve.

Where,

$$ACE_{CA} = [\text{actual interchange } (I_a) - \text{scheduled interchange } (I_s)] - 10\beta (F_a - F_s)$$

$$I_s = \Sigma(\text{adjacent balancing authority schedules}) + \Sigma(\text{dynamic schedules}) + RSDel_{CA}$$

- b. Each responding Participant will maintain an internal timer equal to $TotTmRem_{NWPP}$ and continue to count down this timer to zero if the value from the Reserve Sharing Computer System fails to decrement (indicating probable loss of data link). Whenever a responding Participant is operating in an assumed disconnected mode, $RSDel_{CA}$ is internally frozen. When the internal count-down timer reaches zero, the responding Participant should set $RSDel_{CA}$ to zero.

K. SETTLEMENT

A Participant that receives Assistance Reserve energy must compensate all Participants that deliver Assistance Reserve energy, either by return of energy or financially. Each Participant must declare in advance whether it elects to be compensated for delivery of Assistance Reserve energy by return of energy or financially. All Participants that request Assistance Reserve will settle with responding Participants according to the responding Participants' declaration of either financial or return of energy settlement.

This section explains how the data used for settlement are developed, the process through which Participants declare whether energy delivered as Assistance Reserve is to be returned as energy or settled financially, and the processes for completing financial settlement and return of energy (including responsibility for transmission arrangements).

K.1. Settlement Data

Each hour, whether or not there has been a Reserve Sharing Request, the Reserve Sharing Computer System will transmit the hour-ending integrated dynamic schedule quantities (MWh) to all Participating Balancing Authorities. These data will be referred to as "Settlement Data" and will include source/sink energy information without consideration of transmission "wheeling" through intervening systems. Settlement Data are rounded and used to develop adjacent balancing authority interchange schedules. Settlement Data will be used to construct the official reserve sharing energy matrix (the "Matrix").

a. Rounding

Settlement Data are rounded to whole integers to accommodate scheduling and accounting systems:

- All Settlement Data quantities less than 1 MWh will be rounded to 0 MWh (e.g., 0.7 yields 0 MWh). This practice will reduce nuisance scheduling of small quantities.
- For quantities equal to or greater than 1 MWh, conventional rounding practices will apply. Fractional quantities between $1/100$ and $49/100$ will be rounded down (e.g., 27.2 yields 27 MWh) and quantities between $50/100$ and $99/100$ will be rounded up (e.g., 27.9 yields 28 MWh). After rounding, Settlement Data are compiled into the Matrix.

b. Mapping of Energy Schedules

Energy schedules must be mapped to adjacent balancing authorities to allow proper energy accounting consistent with existing reliability standards and regional business practices. The Participants have agreed to the transmission mapping for reserve sharing as set forth in Attachment D. This mapping includes wheeling parties between nonadjacent balancing authorities, and, as further explained in Section K.1.c below, serves as the basis for templates used to create after-the-fact tags for deliveries of Assistance Reserve energy.

Attachment F describes the Reserve Sharing Group's procedure for revising the transmission mapping in Attachment B and any corresponding need to revise associated tag templates.

c. Automatic Tagging and Tag Templates

The transmission mapping set forth in Attachment D serves as the basis for tag templates associated with delivery of Assistance Reserve energy between Participating Balancing Authorities. The Northwest Power Pool Corporation has a contract with Open Access Technology International, Inc. (OATI) to produce after-the-fact energy schedule tags, using the transmission mapping in Attachment D as the basis for tag templates, for all deliveries of Assistance Reserve energy. These tags are provided to the Participants and the WECC Western Interchange Tool (WIT).

The NWPP Staff is responsible for keeping the transmission mapping attachment, and the templates used by OATI, up-to-date in accordance with requests made by Participating Balancing Authorities. Attachment D describes the process through which the NWPP Staff will arrange to revise to any reserve sharing tag templates that might be affected by changes to the transmission mapping in Attachment D.

K.2. Declarations Concerning Settlement Method

All Participants that request Assistance Reserve will settle with responding Participants according to the responding Participants' declaration of either financial or return of energy settlement. Each Participant must declare its choice of settlement method to the RSG Committee. Each Participant's declaration will be its default method of settlement until the declaring Participant notifies the RSG Committee of a change. A Participant may change its declaration of settlement method up to twice each year, on or about January 1 and on or about July 1, by providing notice to the RSG Committee. Declarations concerning settlement method will be recorded in the RSG Committee's meeting notes. Declarations made in January will become effective on February 1 and declarations made in July will become effective August 1.

Participants may agree separately to alternate procedures, provided the affected Participants can account for the transaction appropriately.

K.3. Financial Settlement

If a Participant elects to be financially reimbursed for providing Assistance Reserve energy,

- a. for purposes of the Reserve Sharing Program, the “Settlement Price” will be the average of the Powerdex Mid-Columbia hourly price for (1) the hour during which the Participant first requests Assistance Reserve (the “Request Hour”) and (2) each of the two hours immediately following the Request Hour; *provided, however*, that in no event will the Settlement Price be less than zero or greater than the price cap in effect for the WECC in accordance with regulations and orders of the Federal Energy Regulatory Commission (FERC) in effect as of the Request Hour.
- b. With respect to FERC-jurisdictional entities, the Settlement Price will be set forth in the Participant’s individual tariff on file with and approved by FERC. In the event that the Settlement Price set forth in a. above is amended, such amended Settlement Price will not be effective until 90 days after the date of such amendment in order to allow FERC-jurisdictional entities time to amend their tariffs.
- c. On or about July 1 of each year, the RSG Committee (or a work group or task force appointed by the RSG Committee) will review the definition of “Settlement Price,” and may elect to either maintain the current definition of “Settlement Price” or propose a modified definition to be considered for approval at the next meeting of the RSG Committee. The effective date of any modification to the definition of “Settlement Price” will be coordinated to allow Participants with applicable tariffs filed with FERC to make any necessary filings with FERC.
- d. Unless the affected Participants have agreed otherwise, financial settlements will occur under the responding Participant’s normal monthly billing cycle.

K.4. Return Energy and Associated Transmission

Participants that receive Assistance Reserve energy from responding Participants that have elected to settle through return of energy must return the energy to those responding Participants within 168 hours from the time of initial delivery. The receiving Participant must return the energy during periods (On-Peak and Off-Peak “in-kind” energy) that correspond to the periods during which Assistance Reserve energy was delivered to the receiving Participant. Participants may agree to an alternate procedure, provided the affected Participants can account for the transaction appropriately.

All returns of energy under the Reserve Sharing Program must be scheduled using standard scheduling practices on the necessary transmission paths. Any transmission costs necessary for settlement by return energy, including wheeling and losses, are to be borne by the responding Participant (*i.e.*, the Participant receiving the return energy).

L. TRACKING AND REPORTING

L.1. NWPP RSG Verification Forms

A Participant must prepare and submit to the NWPP Staff a completed NWPP RSG Verification Form whenever:

- a. the Participant makes a Reserve Sharing Request under the Reserve Sharing Program (including use of backup procedures specified in Section N if the automated process fails), and
- b. the Participant has experience a Reportable Disturbance, as defined in Section B.

NWPP RSG Verification Forms are available on the NWPP Website (<http://www.nwpp.org/procedures.html>). Completed NWPP RSG Verification Forms, including Area Control Error and Net Interchange Deviation charts, should be submitted to NWPP Staff within two working days following the triggering event. Forms may be transmitted by fax (503-445-1070) or e-mail (nwpprsg@nwpp.org).

Participating Balancing Authorities' reporting obligations for the Reserve Sharing Program are not necessarily synonymous with compliance reporting obligations to the WECC and NERC. The Northwest Power Pool Corporation, in its capacity as agent for the Reserve Sharing Group, is responsible for submitting periodic reports to the WECC and NERC in accordance with their requirements.

L.2. Contingency Reserve Adjustment Factor

Each calendar quarter, NWPP Staff will compute a Contingency Reserve Adjustment Factor for each Participant and report it to the WECC and the NERC. The NWPP Staff will determine the NWPP average percent recovery for all Reportable Disturbances using ACE_{NWPP} or $\Sigma(ACE_{CA})$, whichever produces the most favorable recovery percentage.

- If the NWPP does not meet the requirements of BAL-002 for a calendar quarter, the Contingency Reserve for NWPP will be increased. The increase will be allocated to all Participating Balancing Authorities that did not satisfy BAL-002 for any Reportable Disturbance during that quarter on a pro-rata basis as follows:

$$\alpha = \beta * \chi / \delta;$$

Where,

α = a Participating Balancing Authority's increase in Contingency Reserve,

β = increase in NWPP Contingency Reserve as a result of the NERC's Disturbance Control Standard requirements,

χ = sum (in MW) by which a given Participating Balancing Authority has been deficient for all Reportable Disturbances in the quarter, and

δ = sum (in MW) by which all Participating Balancing Authorities have been deficient for all Reportable Disturbances in the quarter.

χ / δ is to be converted to a percentage before it is multiplied by β .

EXAMPLE CALCULATION

By way of example, suppose that there have been two Disturbances in a given calendar quarter. In the first Disturbance, the NWPP was short of the required Contingency Reserve by 200 MW, and of that 200 MW, a given Participant (“Participant A”) was responsible for 50 MW of the deficiency. In the second Disturbance, the NWPP was short by 400 MW and Participant A was responsible for 10 MW of the deficiency. The allocation formula would show that Participant A was responsible for an aggregate of 60 MW of deficiency during a period in which the NWPP as a whole had an aggregate deficiency of 600 MW. Participant A would consequently be responsible for 10% (60/600) of the increase in Contingency Reserve necessary to meet the requirements of BAL-002.

- If a Participant’s percent recovery is less than 100% but the deficiency resulted from delivering Assistance Reserve to another Participant, then, if the request was made more than four minutes after the initial event, the deficiency will be reassigned to the Participant that made the Reserve Sharing Request.
- If a Participant’s percent recovery is less than 100% but the deficiency resulted from delivering Assistance Reserve to another Participant, then, if the requesting Participant failed to fully use its Internal Reserve before requesting Assistance Reserve, the responding Participant may file a protest with the NWPP Staff to have the deficiency reassigned to the requesting Participant.
- If the percent recovery for all Participants combined is less than 100%, the NWPP Staff may request that each Participant provide Contingency Reserve records for the calendar quarter during which the NWPP was deficient. Each Participant will submit records for its 10-minute average Contingency Reserve and its 10-minute average Contingency Reserve Obligation, measured (a) from ten to twenty minutes after the hour and (b) from forty to fifty minutes after the hour.
- If a Participant does not deliver Assistance Reserve when requested, the NWPP Staff will request that Participant’s records (for the previous 24 hours) of 10-minute average Contingency Reserve and 10-minute average Contingency Reserve Obligation measured (a) from ten to twenty minutes after the hour and (b) from forty to fifty minutes after the hour.
- If a Participant does not use all of its Internal Reserve before requesting Assistance Reserve, the NWPP Staff may request that Participant’s records (for the previous 24 hours) of 10-minute average Contingency Reserve and 10-minute average Contingency Reserve Obligation measured (a) from ten to twenty minutes after the hour and (b) from forty to fifty minutes after the hour.

- As provided in Section D.3.e, any problems with respect to Participant performance under the Reserve Sharing Program will be addressed by the RSG Committee.

M. RESERVE SHARING ZONES

The Reserve Sharing Program takes into account the effect constrained transmission paths can have on the ability of Participants to deliver Assistance Reserve energy to one another. When a Participating Balancing Authority (or a group of Participating Balancing Authorities) is separated from remaining Participants by a constrained transmission path, the effect of the constraint is reflected in the establishment of Reserve Sharing Zones. Attachment C to this document identifies the Reserve Sharing Zones for the Reserve Sharing Program, together with the sequence (levels) through which Assistance Reserve is deployed for each Reserve Sharing Zone.

N. BACKUP PROCEDURES

Reserve Sharing Requests and delivery of Assistance Reserve energy are normally implemented through the Reserve Sharing Computer System. When a Participant cannot access the Reserve Sharing Computer System (or the system is inoperable), the Participant should use the manual backup procedures described in Attachment E to make any Reserve Sharing Requests. In these circumstances, a responding Participant is obligated to provide Assistance Reserve only up to the amount of its available transmission capacity or its Contingency Reserve Obligation, whichever is smaller. The settlement process for delivery of Assistance Reserve energy using the backup procedure is the same as for the automated reserve sharing process, except that requesting and responding Participants must agree (on a case-by-case basis) to any reserve sharing transactions instead of obtaining the information from the Reserve Sharing Computer System. This process must be in accordance with Attachment G for production of after-the-fact tags and in accordance with existing reliability standards and regional business practices.

O. PROCEDURES FOR ADDRESSING ISSUES AFFECTING RESERVE SHARING PROGRAM WHEN AGENCY AGREEMENT PROCESS IS INSUFFICIENT

To facilitate reporting and compliance activities related to NERC or WECC reliability standards that may affect the Reserve Sharing Program, the Participating Balancing Authorities have entered into an *Agreement Appointing Agent and Establishing Responsibilities Related to Reserve Sharing Group Compliance with BAL-002* (the “Agency Agreement”). All Participating Balancing Authorities, as well as the Northwest Power Pool Corporation, are parties to the Agency Agreement. The Agency Agreement contains provisions that enable Participating Balancing Authorities to call meetings on specified prior notice and make decisions about matters concerning the Agency Agreement or the Reserve Sharing Program. Any meeting or vote under the Agency Agreement requires at least 10 days’ prior notice.

If an urgent matter related to Reserve Sharing Program arises, and the NWPP Staff determines in good faith that either (1) there is insufficient time to address the matter through the procedures in the Agency Agreement or (2) the matter is outside the scope of the Agency Agreement, the NWPP Staff will:

- make commercially reasonable efforts to promptly deliver electronic notice of the matter to each designated contact for notice under the Agency Agreement;
- convene a meeting by telephone conference (with the option of in-person attendance at the offices of the Northwest Power Pool Corporation if feasible) of all available Participating Balancing Authorities, giving as much advance notice and facilitating attendance of as many Participating Balancing Authorities as feasible in view of any need for prompt action;
- seek input from the Participating Balancing Authorities as to what action should be taken, and, if appropriate in the judgment of the NWPP Staff or requested by any Participating Balancing Authority, take a vote of the Participating Balancing Authorities (on the basis that a vote of not less than two-thirds of the Participating Balancing Authorities present at the time the vote is taken will be necessary to approve an action or decision); and
- make commercially reasonable efforts to take follow-up action consistent with the input received or results of any vote taken in accordance with this Section M.

No vote of the Participating Balancing Authorities conducted in accordance with this Section M may have the effect of (a) amending this Reserve Sharing Program documentation, (b) amending the Agency Agreement, (c) authorizing settlement of any NERC or WECC compliance-related matter that will or could cause any party to incur violation(s), monetary penalties or other legal liability (unless the party or parties incurring violation(s), monetary penalties or legal liability have given their prior written consent); or (d) restricting the ability of any party to independently exercise whatever legal or procedural rights it may have to challenge action taken by or petition an Enforcement Authority (as that term is defined in the Agency Agreement) in connection with any NERC or WECC compliance-related matter.



ATTACHMENTS

Attachment A – Calculation of Contingency Reserve Obligations; Spinning and Nonspinning Reserve Requirements

Attachment B – Qualifying Events

Attachment C – Reserve Sharing Zones and Levels

Attachment D – Transmission Mapping for Reserve Sharing Program

Attachment E – Backup Procedures for Reserve Sharing Program

Attachment F – Reserve Tagging Change Process

Attachment G – Backup Process for After-the-Fact Reserve Sharing Tags

Attachment H – Reserve Sharing Participants

Attachment I – NERC Standard BAL-002-0 – Disturbance Control Performance

Attachment J – WECC Standard BAL-STD-002-0 – Operating Reserves

Attachment K – Northwest Power Pool Reserve Sharing Group Most Severe Single Contingency Table

Attachment A**Calculation of Contingency Reserve Obligations; Spinning and Nonspinning Reserve Requirements****1. Calculation of Participating Balancing Authority Contingency Reserve Obligation**

There are four steps that determine the total amount of Contingency Reserve a Participating Balancing Authority is required to carry. WECC Standard BAL-STD-002-0 requires that a balancing authority or reserve sharing group carry at least enough Contingency Reserve to cover *the greater of* the applicable Most Severe Single Contingency or the sum of specified percentages of Load Responsibility served by thermal or hydroelectric generation.

The first two steps in the process for the Reserve Sharing Program are designed to assure compliance with the minimum amount required by WECC Standard BAL-STD-002-0 (supplemented by the Reserve Sharing Group's own rule requiring additional Contingency Reserve for Load Responsibility served by wind generation). The third step incorporates any adjustments for additional Contingency Reserve a Participating Balancing Authority must carry to make up for insufficient Contingency Reserve in a prior reporting period (Contingency Reserve Adjustment Factor). The final step accounts for any additional Contingency Reserve that may be needed in a Reserve Sharing Zone to cover the Most Severe Single Contingency within the Reserve Sharing Zone.

Explanations and formulas for each of these steps are set forth below.³

a. Step One – Calculation of Participating Balancing Authority Preliminary Contingency Reserve Obligation:

A Participating Balancing Authority's preliminary Contingency Reserve Obligation (before the adjustments described in the remainder of Section 1 of this Attachment A) is the sum of (i) five percent of the Participating Balancing Authority's Load Responsibility served by hydroelectric generation, plus (ii) five percent of the Participating Balancing Authority's Load Responsibility served by wind generation, plus (iii) seven percent of the Participating Balancing Authority's Load Responsibility served by thermal generation.

$$CRO_{CA} = PHG_{CA} + PWG_{CA} + PTG_{CA}$$

Where,

³ For consistency with formulas used in the Reserve Sharing Computer System, individual Participating Balancing Authority obligations are designated by the subscript "CA." This is because the formulas in the Reserve Sharing Computer System were established when the function roughly corresponding to a balancing authority was referred to as a control area.

CRO_{CA} = Participating Balancing Authority's preliminary Contingency Reserve Obligation;

PHG_{CA} = five percent of the Participating Balancing Authority's Load Responsibility served by hydroelectric generation;

PWG_{CA} = five percent of the Participating Balancing Authority's Load Responsibility served by wind generation; and

PTG_{CA} = seven percent of the Participating Balancing Authority's Load Responsibility served by thermal generation.

b. Step Two – Check for Deficiency Related to Most Severe Single Contingency for the NWPP:

Once the Participating Balancing Authorities' preliminary Contingency Reserve Obligation has been calculated, the second step of the process is to check for any potential deficiency, should the Most Severe Single Contingency for the NWPP exceed the sum of the Participating Balancing Authorities' preliminary Contingency Reserve Obligations.

The NWPP's Most Severe Single Contingency is compared to the sum of all Participating Balancing Authorities' preliminary Contingency Reserve Obligations. If the Most Severe Single Contingency is greater, the difference between these two figures (the "shortfall") is allocated among the Participating Balancing Authorities in proportion to their relative shares of the Reserve Sharing Group's preliminary Contingency Reserve Obligation. This results in an upward adjustment to each Participating Balancing Authority's preliminary Contingency Reserve Obligation.

The formulas for this step are:

If $\Sigma CRO_{CA} < MSSC_{NWPP}$, then

$$CRO_{Short} = MSSC_{NWPP} - \Sigma CRO_{CA}$$

and

$$AdjCRO_{CA} = CRO_{Short} * CRO_{CA} / \Sigma CRO_{CA}$$

Where,

ΣCRO_{CA} = sum of all Participating Balancing Authorities' preliminary Contingency Reserve Obligations;

$MSSC_{NWPP}$ = the Most Severe Single Contingency for the Reserve Sharing Group, determined in accordance with the table set forth in Attachment K;

CRO_{Short} = the amount by which the Most Severe Single Contingency for the NWPP exceeds the sum of the Participating Balancing Authorities' preliminary Contingency Reserve Obligations;

CRO_{CA} = the Participating Balancing Authority's preliminary Contingency Reserve Obligation; and

$AdjCRO_{CA}$ = the adjustment to the Participating Balancing Authority's preliminary Contingency Reserve Obligation to reflect the Most Severe Single Contingency for the NWPP.

$MSSC_{NWPP}$ is revised only if the output of the generator (or loading of the transmission line) that sets the $MSSC_{NWPP}$ increases or decreases by 30 MW or more.

c. Step Three – Addition of Any Applicable Contingency Reserve Adjustment Factor:

The third step of the process is to incorporate any Contingency Reserve Adjustment Factor that may apply to one or more Participating Balancing Authorities, as more fully described in Section L.2 of this document.

If a Participating Balancing Authority is subject to a Contingency Reserve Adjustment Factor, this obligation is added to its adjusted Contingency Reserve Obligation computed as provided in Section 1.b of this Attachment A.

Unless the Contingency Reserve Obligations for the Participating Balancing Authorities within a particular Reserve Sharing Zone must be further adjusted for the Zone's Most Severe Single Contingency (as described in Section 1.d below), the result of this third step is the Participating Balancing Authority's total Contingency Reserve Obligation.

The formula reflecting both the adjustment (if required) to a Balancing Authority's Contingency Reserve Obligation for the NWPP's Most Severe Contingency and any applicable Contingency Reserve Adjustment Factor is:

$$TotCRO_{CA} = (CRO_{CA} + AdjCRO_{CA}) * CRAF$$

Where,

$TotCRO_{CA}$ = the Participating Balancing Authority's total Contingency Reserve Obligation (subject to further adjustment, if required, as provided in Section 1.d of this Attachment A);

CRO_{CA} = the Participating Balancing Authority's preliminary Contingency Reserve Obligation;

AdjCRO_{CA} = the adjustment to the Participating Balancing Authority's Contingency Reserve Obligation to reflect the Most Severe Single Contingency for the NWPP; and

CRAF = the Participating Balancing Authority's Contingency Reserve Adjustment Factor (calculated as provided in Section L.2).

d. Step Four – Check for Deficiency Related to Most Severe Single Contingency for a Reserve Sharing Zone:

The fourth and final step in the process is to check for any potential deficiency within a Reserve Sharing Zone if the Zone's Most Severe Single Contingency exceeds the sum of the adjusted Contingency Reserve Obligations for the Zone's Participating Balancing Authorities.

Each Zone's Most Severe Single Contingency is compared to the sum of the (i) adjusted Contingency Reserve Obligations for the Participating Balancing Authorities in that Zone, and (ii) the amount of Assistance Reserve that can be delivered from adjacent Reserve Sharing Zones based on transfer limits and actual flows (and, if appropriate, scheduled flows) on the paths that connect the Zones to each other.

Specifically, the Reserve Sharing Computer System continuously monitors path transfer limits (LIMIT_{Pathnn}), actual path flows (ACTUAL_{Pathnn}), and, where applicable, scheduled path flows (SCHED_{Pathnn}).

If, after accounting for Assistance Reserve that can be delivered from adjacent Reserve Sharing Zones, the combined amount of Contingency Reserve within and deliverable to the Zone is less than the Zone's the Most Severe Single Contingency, this shortfall is allocated among the Zone's Participating Balancing Authorities in proportion to their relative shares of the aggregate adjusted Contingency Reserve Obligation for the Reserve Sharing Zone. This produces the Participating Balancing Authorities' total Contingency Reserve Obligations.

The formulas for adjusting total Contingency Reserve Obligations, if necessary, for the Most Severe Single Contingency for a Reserve Sharing Zone are as follows:

If $\sum CRO_{RSZ} + ASDEL_{Lim} < MSSC_{RSZ}$, then

$$CRO_{RSZShort} = MSSC_{RSZ} - (\sum CRO_{RSZ} + ASDEL_{Lim})$$

and

$$AddCRO_{CA} = CRO_{RSZShort} * (CRO_{CA} + AdjCRO_{CA}) / \sum CRO_{RSZ}$$

and

$$\text{TotCRO}_{CA} = [(\text{CRO}_{CA} + \text{AdjCRO}_{CA}) * \text{CRAF}] + \text{AddCRO}_{CA}$$

Where,

ΣCRO_{RSZ} = sum of adjusted Contingency Reserve Obligations for all Participating Balancing Authorities in the Reserve Sharing Zone;

ASDEL_{Lim} = the amount of Assistance Reserve that can be delivered to the Reserve Sharing Zone from adjacent Reserve Sharing Zones, after accounting for relevant transfer path limits, actual path flows, and if applicable, scheduled path flows;

MSSC_{RSZ} = the Most Severe Single Contingency for the Reserve Sharing Zone;

$\text{CRO}_{RSZShort}$ = the amount by which the Most Severe Single Contingency for the NWPP exceeds the sum of (i) the Participating Balancing Authorities' adjusted Contingency Reserve Obligations (ΣCRO_{RSZ}), plus (ii) amount of Assistance Reserve that can be delivered to the Reserve Sharing Zone from adjacent Reserve Sharing Zones (ASDEL_{Lim});

AddCRO_{CA} = the additional amount of Contingency Reserve a Participating Balancing needs to carry to reflect the Most Severe Single Contingency for the Reserve Sharing Zone;

TotCRO_{CA} = Participating Balancing Authority's Contingency Reserve Obligation after all adjustments;

CRO_{CA} = the Participating Balancing Authority's preliminary Contingency Reserve Obligation;

AdjCRO_{CA} = the adjustment to the Participating Balancing Authority's Contingency Reserve Obligation to reflect the Most Severe Single Contingency for the NWPP; and

CRAF = the Participating Balancing Authority's Contingency Reserve Adjustment Factor.

MSSC_{RSZ} is revised only if the output of the generator (or loading of the transmission line) that sets the MSSC_{RSZ} increases or decreases by 5 MW or more.

2. Determination of Aggregate Contingency Reserve Obligation for the Reserve Sharing Group

The Contingency Reserve Obligation for the Reserve Sharing Group is calculated by summing the total Contingency Reserve Obligations (calculated as described in Section 1 of this Attachment A) of all Participating Balancing Authorities.

$$CRO_{NWPP} = \Sigma \text{Tot}CRO_{CA}$$

Where,

CRO_{NWPP} = the aggregate Contingency Reserve Obligation for the Reserve Sharing Group; and

$\Sigma \text{Tot}CRO_{CA}$ = the sum of the total Contingency Reserve Obligations of all Participating Balancing Authorities (after all adjustments described in Section 1 of this Attachment A).

3. Minimum Spinning Reserve Requirements and Permitted Nonspinning Reserve Amounts and Types

a. Minimum Spinning Reserve and Permitting Use of Nonspinning Reserve

At least 50% of a Participating Balancing Authority's Contingency Reserve Obligation (CRO_{CA}) must be Spinning Reserve. Spinning Reserve carried to meet minimum Contingency Reserve Obligations must be in addition to Spinning Reserve required to meet the Regulating Reserve component of WECC Standard BAL-STD-002-0. The combined unit ramp rate of each Participating Balancing Authority's online, unloaded generating capacity must be capable of responding to the entire Spinning Reserve requirement for that Participating Balancing Authority's system.

The remainder of a Participating Balancing Authority's Contingency Reserve Obligation (that is, any portion other than the 50% of its CRO_{CA} that must be Spinning Reserve) may be met with either Spinning or Nonspinning Reserve, provided that any Nonspinning Reserve applied to a Participating Balancing Authority's Contingency Reserve Obligation can be made fully effective within 10 minutes.

b. Permitted Sources of Nonspinning Reserve

To the extent a Participating Balancing Authority is permitted to use Nonspinning Reserve to meet a portion of its Contingency Reserve Obligation calculated in accordance with Section 1 of this Attachment A, the following may be used as sources of Nonspinning Reserve:

1. interruptible load,
2. interruptible exports,
3. on-demand rights from other systems,
4. Spinning Reserve beyond that necessary to meet the minimum requirements for its Contingency Reserve Obligation (*see* Section D.4.a), and
5. off-line generation (such as combustion turbines) that qualifies under NERC and WECC standards as Nonspinning Reserve.

Attachment B

Qualifying Events

A “Qualifying Event” is any event described in subsections (a), (b), (c), or (d) below. This Attachment B may be modified from time to time by action of the RSG Committee.

(a) Sudden Loss of Generation:

- a sudden loss of generation
 - due to
 - unit tripping,
 - loss of generator interconnection facilities resulting in isolation of the generator from the Bulk Electric System (as that term is defined by NERC) or from the Participant’s electric system,
 - loss of wind generation resulting from high-speed cutout or temperature extremes outside the wind generation manufacturer’s standard operating temperature range, or
 - forced outage of transmission facilities;
 - that causes an instantaneous and unexpected change to the Participant’s ACE.

(b) Sudden Loss of Non-Interruptible Import:

- a sudden loss of a non-interruptible import, due to forced outage of transmission equipment, that causes an instantaneous and unexpected change to the Participant’s ACE.

(c) Unexpected Failure of Generation to Maintain or Increase:

- an unexpected failure of generation to maintain or increase
 - due to
 - inability to start a unit the Participant planned to bring online at that time (for reasons other than lack of fuel), or
 - internal plant equipment problems that force the generator to be ramped down or taken offline;
 - that, even if not an immediate cause of an unexpected change to the Participant’s ACE, will, in the Participant’s judgment, leave the Participant unable to maintain its ACE following the failure unless it deploys Contingency Reserve.



(d) Declaration of Energy Emergency Alert 2 or 3:

- a Participating Balancing Authority's inability to meet firm load such that the Participating Balancing Authority has requested that its Reliability Coordinator (as that term is defined by NERC) declare, and the Reliability Coordinator has declared (or confirmed that it will declare) an Energy Emergency Alert 2 or Alert 3 (as described in NERC Standard EOP-002-2 or a successor standard).



Attachment C

Reserve Sharing Zones and Levels

Each Reserve Sharing Zone identified below has multiple levels for providing Assistance Reserve. Level 1 is the list of initial providers. If there is insufficient Assistance Reserve at Level 1 or there are constrained paths, additional zones will be included by moving out one level at a time until there is sufficient Assistance Reserve or all Participating Balancing Authorities are included.

The third page of this Attachment C contains a schematic representation of the Northwest Power Pool Reserve Sharing Program Reserve Sharing Zones.

Alberta Electric System Operator (AESO)

- Level 1: BCHA
- Level 2: BCHA + PNW
- Level 3: BCHA + PNW + IPCO + NCal
- Level 4: BCHA + PNW + IPCO + SPP-PACE + NCal

B.C. Hydro and Power Authority (BCHA)

- Level 1: AESO + PNW
- Level 2: AESO + PNW + IPCO + NCal
- Level 3: AESO + PNW + IPCO + SPP-PACE + NCal

Oregon-Washington-Montana – Pacific Northwest (PNW) Zone

- Level 1: PNW
- Level 2: PNW + IPCO + BCHA + NCal
- Level 3: PNW + IPCO + BCHA + SPP-PACE + AESO + NCal

Idaho Power Company (IPCO)

- Level 1: PNW + SPP-PACE
- Level 2: PNW + SPP-PACE + BCHA + NCal
- Level 3: PNW + SPP-PACE + BCHA + AESO + NCal

Sierra Pacific Power Company – PacifiCorp East (SPP-PACE) Zone

- Level 1: SPP-PACE
- Level 2: IPCO + PNW
- Level 3: IPCO + PNW + BCHA
- Level 4: IPCO + PNW + BCHA + AESO



Northern California (NCal)

Level 1: NCal

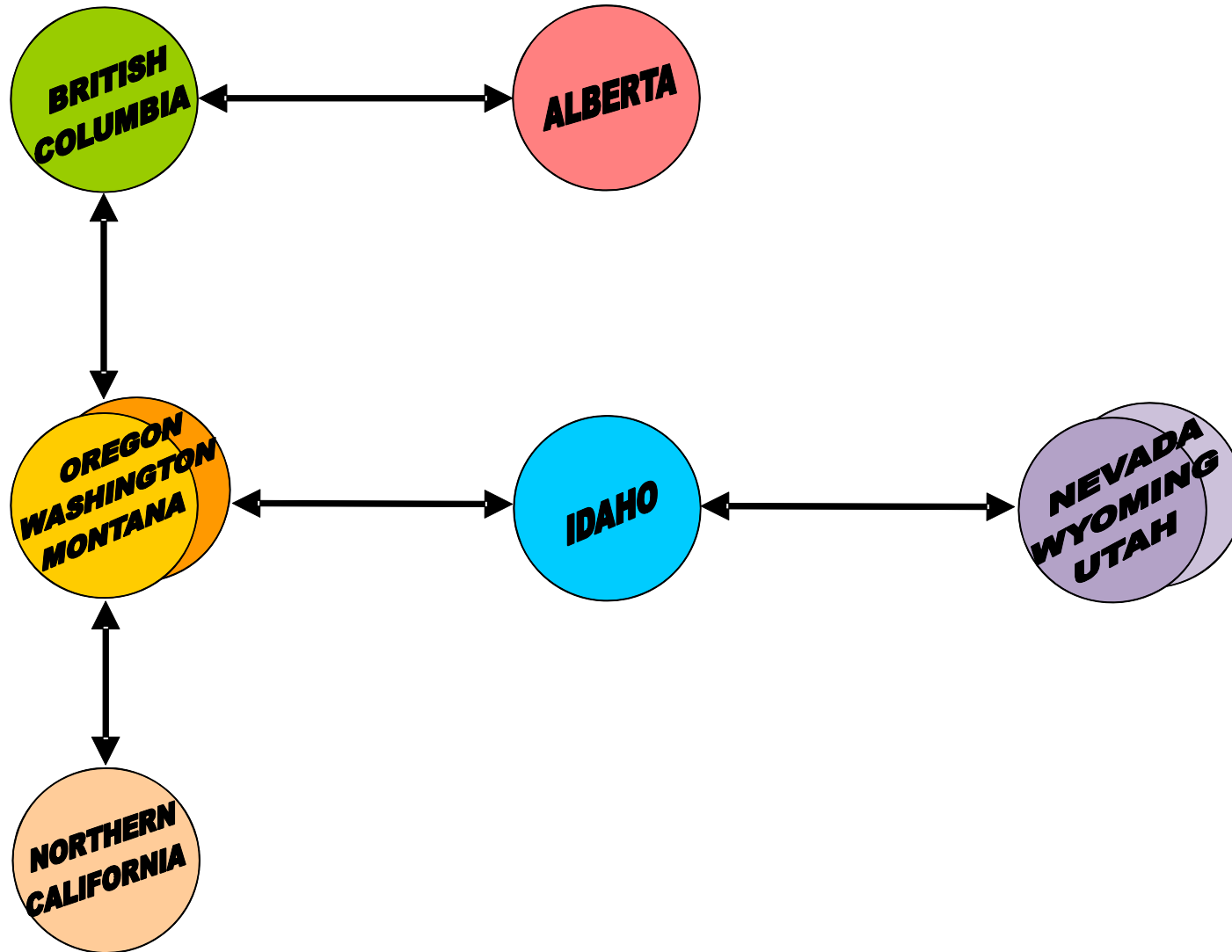
Level 2: NCal + PNW

Level 3: PNW + IPCO + BCHA

Level 4: PNW+ IPCO + SPP-PACE + BCHA + AESO

Reserve Sharing Zones

Reserve Sharing Program 1-18-06
Current Approved Version: 1-1-2012



Attachment D

Transmission Mapping for Reserve Sharing Program

This Attachment D may be revised upon request to the NWPP Staff by a Participant, provided that all Participants affected by the requested change and the Northwest Power Pool Corporation agree to the proposed revisions. Attachment F, *Transmission Mapping and Tag Template Change Process*, sets forth the process for implanting revisions to the transmission mapping specified in this Attachment D and for corresponding revisions to tag templates for delivery of Assistance Reserve energy if they are needed.

Alberta Electric System Operator (AESO)

Level 1: BCHA

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
AESO	Direct	BCHA

Level 2: BCHA + PNW

Additional accounts for Level 2

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
AESO	BCHA-BPAT	AVA
AESO	BCHA	BPAT
AESO	BCHA-BPAT	CHPD
AESO	BCHA-BPAT	DOPD
AESO	BCHA-BPAT	GCPD
AESO	BCHA-BPAT	NWMT
AESO	BCHA-BPAT	PACW
AESO	BCHA-BPAT	PGE
AESO	BCHA-BPAT	PSEI
AESO	BCHA-BPAT	SCL
AESO	BCHA-BPAT	TPWR
AESO	BCHA-BPAT-NWMT	WAUW
AESO	BCHA-BPAT-NWMT	GWA

Level 3: BCHA + PNW + IPCO + NCal

Additional Accounts for Level 3

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
AESO	BCHA-BPAT	IPCO
AESO	BCHA-BPAT-BANC	TID
AESO	BCHA-BPAT	BANC

Level 4: BCHA + PNW + IPCO + SPP-PACE + NCal

Additional Accounts for Level 4

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
AESO	BCHA-BPAT	IPCO
AESO	BCHA-BPAT-IPCO	SPPC
AESO	BCHA-BPAT-IPCO	PACE

B.C. Hydro (BCHA)

Level 1: AESO + PNW

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
BCHA	Direct	AESO
BCHA	BPAT	AVA
BCHA	Direct	BPAT
BCHA	BPAT	CHPD
BCHA	BPAT	DOPD
BCHA	BPAT	GCPD
BCHA	BPAT	NWMT
BCHA	BPAT	PACW
BCHA	BPAT	PGE
BCHA	BPAT	PSEI
BCHA	BPAT	SCL
BCHA	BPAT	TPWR
BCHA	BPAT-NWMT	WAUW
BCHA	BPAT-NWMT	GWA

Level 2: AESO + PNW + IPCO + NCal

Additional accounts for level 2

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
BCHA	BPAT	IPCO
BCHA	BPAT	BANC
BCHA	BPAT-BANC	TID

Level 3: AESO + PNW + IPCO + SPP-PACE + NCal

Additional accounts for level 3

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
BCHA	BPAT-IPCO	SPPC
BCHA	BPAT-IPCO	PACE



Oregon-Washington-Montana – Pacific Northwest (PNW) Zone

Level 1: PNW Zone

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
AVA	Direct	BPAT
AVA	Direct	CHPD
AVA	Direct	DOPD
AVA	Direct	GCPD
AVA	Direct	NWMT
AVA	Direct	PACW
AVA	Direct	PGE
AVA	Direct	PSEI
AVA	BPAT	SCL
AVA	BPAT	TPWR
AVA	NWMT	WAUW
AVA	NWMT	GWA
BPAT	Direct	AVA
BPAT	Direct	CHPD
BPAT	Direct	DOPD
BPAT	Direct	GCPD
BPAT	Direct	NWMT
BPAT	Direct	PACW
BPAT	Direct	PGE
BPAT	Direct	PSEI
BPAT	Direct	SCL
BPAT	Direct	TPWR
BPAT	NWMT	WAUW
BPAT	NWMT	GWA
CHPD	Direct	AVA
CHPD	Direct	BPAT
CHPD	Direct	DOPD
CHPD	Direct	GCPD
CHPD	BPAT	NWMT
CHPD	Direct	PACW
CHPD	Direct	PGE
CHPD	Direct	PSEI
CHPD	BPAT	SCL
CHPD	BPAT	TPWR
CHPD	BPAT-NWMT	WAUW
CHPD	BPAT-NWMT	GWA
DOPD	Direct	AVA
DOPD	Direct	BPAT
DOPD	Direct	CHPD
DOPD	Direct	GCPD
DOPD	BPAT	NWMT
DOPD	Direct	PACW

DOPD	Direct	PGE
DOPD	Direct	PSEI
DOPD	BPAT	SCL
DOPD	BPAT	TPWR
DOPD	BPAT-NWMT	WAUW
DOPD	BPAT-NWMT	GWA
GCPD	Direct	AVA
GCPD	Direct	BPAT
GCPD	Direct	CHPD
GCPD	Direct	DOPD
GCPD	BPAT	NWMT
GCPD	Direct	PACW
GCPD	Direct	PGE
GCPD	Direct	PSEI
GCPD	BPAT	SCL
GCPD	BPAT	TPWR
GCPD	BPAT-NWMT	WAUW
GCPD	BPAT-NWMT	GWA
GWA	NWMT	AVA
GWA	NWMT	BPAT
GWA	NWMT-BPAT	CHPD
GWA	NWMT-BPAT	DOPD
GWA	NWMT-BPAT	GCPD
GWA	NWMT-BPAT	PACW
GWA	NWMT	PGE
GWA	NWMT-BPAT	PSEI
GWA	NWMT-BPAT	SCL
GWA	NWMT-BPAT	TPWR
NWMT	Direct	AVA
NWMT	Direct	BPAT
NWMT	BPAT	CHPD
NWMT	BPAT	DOPD
NWMT	BPAT	GCPD
NWMT	BPAT	PACW
NWMT	BPAT	PGE
NWMT	BPAT	PSEI
NWMT	BPAT	SCL
NWMT	BPAT	TPWR
NWMT	Direct	WAUW
NWMT	Direct	GWA
PACW	Direct	AVA
PACW	Direct	BPAT
PACW	Direct	CHPD
PACW	Direct	DOPD
PACW	Direct	GCPD
PACW	BPAT	NWMT



PACW	Direct	PGE
PACW	Direct	PSEI
PACW	BPAT	SCL
PACW	BPAT	TPWR
PACW	BPAT-NWMT	WAUW
PACW	BPAT-NWMT	GWA
PGE	Direct	AVA
PGE	Direct	BPAT
PGE	Direct	CHPD
PGE	Direct	DOPD
PGE	Direct	GCPD
PGE	BPAT	NWMT
PGE	Direct	PACW
PGE	Direct	PSEI
PGE	BPAT	SCL
PGE	BPAT	TPWR
PGE	NWMT	WAUW
PGE	NWMT	GWA
PSEI	Direct	AVA
PSEI	Direct	BPAT
PSEI	Direct	CHPD
PSEI	Direct	DOPD
PSEI	Direct	GCPD
PSEI	BPAT	NWMT
PSEI	Direct	PACW
PSEI	Direct	PGE
PSEI	Direct	SCL
PSEI	BPAT	TPWR
PSEI	BPAT-NWMT	WAUW
PSEI	BPAT-NWMT	GWA
SCL	BPAT	AVA
SCL	Direct	BPAT
SCL	BPAT	CHPD
SCL	BPAT	DOPD
SCL	BPAT	GCPD
SCL	BPAT	NWMT
SCL	BPAT	PACW
SCL	BPAT	PGE
SCL	Direct	PSEI
SCL	BPAT	TPWR
SCL	BPAT-NWMT	WAUW
SCL	BPAT-NWMT	GWA
TPWR	BPAT	AVA
TPWR	Direct	BPAT
TPWR	BPAT	CHPD
TPWR	BPAT	DOPD

TPWR	BPAT	GCPD
TPWR	BPAT	NWMT
TPWR	BPAT	PACW
TPWR	BPAT	PGE
TPWR	BPAT	PSEI
TPWR	BPAT	SCL
TPWR	BPAT-NWMT	WAUW
TPWR	BPAT-NWMT	GWA
WAUW	NWMT	AVA
WAUW	NWMT	BPAT
WAUW	NWMT-BPAT	CHPD
WAUW	NWMT-BPAT	DOPD
WAUW	NWMT-BPAT	GCPD
WAUW	NWMT-BPAT	PACW
WAUW	NWMT	PGE
WAUW	NWMT-BPAT	PSEI
WAUW	NWMT-BPAT	SCL
WAUW	NWMT-BPAT	TPWR
WAUW	NWMT	GWA

Level 2: PNW + IPCO + BCHA + NCal

Additional Accounts for Level 2

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
AVA	Direct	IPCO
AVA	BPAT	BCHA
AVA	BPAT-BANC	TID
AVA	BPAT	BANC
BPAT	Direct	IPCO
BPAT	Direct	BCHA
BPAT	BANC	TID
BPAT	Direct	BANC
CHPD	BPAT	IPCO
CHPD	BPAT	BCHA
CHPD	BPAT-BANC	TID
CHPD	BPAT	BANC
DOPD	BPAT	IPCO
DOPD	BPAT	BCHA
DOPD	BPAT-BANC	TID
DOPD	BPAT	BANC
GCPD	BPAT	IPCO
GCPD	BPAT	BCHA
GCPD	BPAT-BANC	TID



GCPD	BPAT	BANC
GWA	NWMT-PACE	IPCO
GWA	NWMT-BPAT	BCHA
GWA	NWMT-BPAT-BANC	TID
GWA	NWMT-BPAT	BANC
NWMT	PACE	IPCO
NWMT	BPAT	BCHA
NWMT	BPAT-BANC	TID
NWMT	BPAT	BANC
PACW	Direct	IPCO
PACW	BPAT	BCHA
PACW	BPAT-BANC	TID
PACW	BPAT	BANC
PGE	BPAT	IPCO
PGE	BPAT	BCHA
PGE	BPAT-BANC	TID
PGE	BPAT	BANC
PSEI	BPAT	IPCO
PSEI	BPAT	BCHA
PSEI	BPAT-BANC	TID
PSEI	BPAT	BANC
SCL	BPAT	IPCO
SCL	BPAT	BCHA
SCL	BPAT-BANC	TID
SCL	BPAT	BANC
TPWR	BPAT	IPCO
TPWR	BPAT	BCHA
TPWR	BPAT-BANC	TID
TPWR	BPAT	BANC
WAUW	NWMT-PACE	IPCO
WAUW	NWMT-BPAT	BCHA
WAUW	NWMT-BPAT-BANC	TID
WAUW	NWMT-BPAT	BANC

Level 3: PNW + IPCO + BCHA + SPP-PACE + AESO + NCal

Additional Accounts for Level 3

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
AVA	IPCO	SPPC
AVA	IPCO	PACE

AVA	BPAT-BCHA	AESO
BPAT	IPCO	SPPC
BPAT	IPCO	PACE
BPAT	BCHA	AESO
CHPD	BPAT-IPCO	SPPC
CHPD	BPAT-IPCO	PACE
CHPD	BPAT-BCHA	AESO
DOPD	BPAT-IPCO	SPPC
DOPD	BPAT-IPCO	PACE
DOPD	BPAT-BCHA	AESO
GCPD	BPAT-IPCO	SPPC
GCPD	BPAT-IPCO	PACE
GCPD	BPAT-BCHA	AESO
GWA	NWMT-PACE-IPCO	SPPC
GWA	NWMT-PACE-IPCO	PACE
GWA	NWMT-BPAT-BCHA	AESO
NWMT	PACE-IPCO	SPPC
NWMT	PACE-IPCO	PACE
NWMT	BPAT-BCHA	AESO
PACW	IPCO	SPPC
PACW	IPCO	PACE
PACW	BPAT-BCHA	AESO
PGE	BPAT-IPCO	SPPC
PGE	BPAT-IPCO	PACE
PGE	BPAT-BCHA	AESO
PSEI	BPAT-IPCO	SPPC
PSEI	BPAT-IPCO	PACE
PSEI	BPAT-BCHA	AESO
SCL	BPAT-IPCO	SPPC
SCL	BPAT-IPCO	PACE
SCL	BPAT-BCHA	AESO
TPWR	BPAT-IPCO	SPPC
TPWR	BPAT-IPCO	PACE
TPWR	BPAT-BCHA	AESO
WAUW	NWMT- PACE-IPCO	SPPC
WAUW	NWMT-PACE-IPCO	PACE
WAUW	NWMT-BPAT-BCHA	AESO



Idaho Power Company (IPCO)

Level 1: PNW + SPP-PACE

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
IPCO	Direct	AVA
IPCO	Direct	BPAT
IPCO	BPAT	CHPD
IPCO	BPAT	DOPD
IPCO	BPAT	GCPD
IPCO	PACE	NWMT
IPCO	Direct	PACW
IPCO	BPAT	PGE
IPCO	BPAT	PSEI
IPCO	BPAT	SCL
IPCO	BPAT	TPWR
IPCO	Direct	PACE
IPCO	Direct	SPPC
IPCO	PACE-NWMT	WAUW
IPCO	PACE-NWMT	GWA

Level 2: PNW + SPP-PACE + BCHA + NCal

Additional accounts for level 2

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
IPCO	BPAT	BCHA
IPCO	BPAT-BANC	TID
IPCO	BPAT	BANC

Level 3: PNW + SPP-PACE + BCHA + AESO + NCal

Additional accounts for level 3

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
IPCO	BPAT-BCHA	AESO

Sierra Pacific Power Company (SPPC)

Level 1: IPCO + PNW + PACE

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
SPPC	Direct	IPCO
SPPC	IPCO	AVA
SPPC	IPCO	BPAT
SPPC	IPCO-BPAT	CHPD
SPPC	IPCO-BPAT	DOPD
SPPC	IPCO-BPAT	GCPD



SPPC	IPCO-PACE	NWMT
SPPC	IPCO	PACW
SPPC	IPCO-BPAT	PGE
SPPC	IPCO-BPAT	PSEI
SPPC	IPCO-BPAT	SCL
SPPC	IPCO-BPAT	TPWR
SPPC	Direct	PACE
SPPC	IPCO-PACE-NWMT	WAUW
SPPC	IPCO-PACE-NWMT	GWA

Level 2: IPCO + PNW + PACE + BCHA + NCal

Additional Accounts for Level 2

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
SPPC	IPCO-BPAT	BCHA
SPPC	IPCO-BPAT-BANC	TID
SPPC	IPCO-BPAT	BANC

Level 3: IPCO + PNW + PACE + BCHA + AESO + NCal

Additional Accounts for Level 3

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
SPPC	IPCO-BPAT-BCHA	AESO

PacifiCorp East (PACE)

Level 1: IPCO + PNW + SPPC

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
PACE	Direct	IPCO
PACE	IPCO	AVA
PACE	IPCO	BPAT
PACE	IPCO-BPAT	CHPD
PACE	IPCO-BPAT	DOPD
PACE	IPCO-BPAT	GCPD
PACE	IPCO-PACE	NWMT
PACE	IPCO	PACW
PACE	IPCO-BPAT	PGE
PACE	IPCO-BPAT	PSEI
PACE	IPCO-BPAT	SCL
PACE	IPCO-BPAT	TPWR
PACE	Direct	SPPC
PACE	IPCO-PACE-NWMT	WAUW
PACE	IPCO-PACE-NWMT	GWA

Level 2: IPCO + PNW + SPPC + BCHA + NCal

Additional Accounts for Level 2



<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
PACE	IPCO-BPAT	BCHA
PACE	IPCO-BPAT-BANC	TID
PACE	IPCO-BPAT	BANC

Level 3: IPCO + PNW + SPPC + BCHA +NCal+AESO

Additional Accounts for Level 3

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
PACE	IPCO-BPAT-BCHA	AESO

Turlock Irrigation District (TID)

Level 1: BANC

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
TID	Direct	BANC

Level 2: BANC + PNW

Additional accounts for Level 2

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
TID	BANC-BPAT	AVA
TID	BANC	BPAT
TID	BANC -BPAT	CHPD
TID	BANC -BPAT	DOPD
TID	BANC -BPAT	GCPD
TID	BANC -BPAT	NWMT
TID	BANC -BPAT	PACW
TID	BANC -BPAT	PGE
TID	BANC -BPAT	PSEI
TID	BANC -BPAT	SCL
TID	BANC -BPAT	TPWR
TID	BANC -BPAT-NWMT	WAUW
TID	BANC -BPAT-NWMT	GWA

Level 3: BANC + PNW + IPCO + BCHA

Additional Accounts for Level 3

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
TID	BANC -BPAT	IPCO
TID	BANC -BPAT	BCHA
TID	BANC -BPAT-IPCO	SPPC
TID	BANC -BPAT-IPCO	PACE

Level 4: BANC + PNW + IPCO + SPP-PACE + BCHA + AESO



Additional Accounts for Level 4

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
TID	BANC –BPAT-BCHA	AESO

Balancing Authority of Northern California (BANC)

Level 1: TID

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
BANC	Direct	TID

Level 2: TID + PNW

Additional accounts for Level 2

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
BANC	BPAT	AVA
BANC	Direct	BPAT
BANC	BPAT	CHPD
BANC	BPAT	DOPD
BANC	BPAT	GCPD
BANC	BPAT	NWMT
BANC	BPAT	PACW
BANC	BPAT	PGE
BANC	BPAT	PSEI
BANC	BPAT	SCL
BANC	BPAT	TPWR
BANC	BPAT-NWMT	WAUW
BANC	BPAT-NWMT	GWA

Level 3: TID + PNW + IPCO + BCHA

Additional accounts for level 3

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
BANC	BPAT	IPCO
BANC	BPAT	BCHA

Level 4: TID + PNW + IPCO + SPP-PACE + BCHA + AESO

Additional accounts for level 4

<i>Requesting party</i>	<i>Path</i>	<i>Delivering Party</i>
BANC	BPAT-IPCO	SPPC
BANC	BPAT-IPCO	PACE
BANC	BPAT-BCHA	AESO

Attachment E

BACKUP PROCEDURES FOR RESERVE SHARING PROGRAM

1. Participant Cannot Access Reserve Sharing Computer System or Reserve Sharing Computer System Is Inoperable

Reserve Sharing Requests and delivery of Assistance Reserve are normally implemented through the Reserve Sharing Computer System. When the Reserve Sharing Computer System is inoperable or inaccessible, a Participant that needs to make a Reserve Sharing Request should contact other Participants by telephone to request Assistance Reserve. The provisions below (Sections 2.a, 2.b, and 2.c) will apply for the manual backup procedure. The settlement process for delivery of Assistance Reserve using the backup procedure is the same as for the automated reserve sharing process, except that requesting and responding Participants must agree (on a case-by-case basis) to any reserve sharing transactions instead of obtaining the information from the Reserve Sharing Computer System. This process must be in accordance with Attachment G for production of after-the-fact tags and in accordance with existing reliability standards and regional business practices.

a. Transmission Limitations; Adjacent Utilities

To minimize potential transmission problems, whenever possible a Participant that needs to request Assistance Reserve by telephone should contact an adjacent Participant first.

b. Backup Reserve Sharing Procedure – Telephone Requests

Because of the NERC Disturbance Control Standard 15-minute criterion for replacement of lost capacity, the number of telephoned assistance requests that a Participant's dispatcher can make is limited. To enhance Participants' ability to meet this standard, Participants may use the following procedure (and Participants may use any economic arrangements under existing contracts by mutual agreement at any point in the following sequence):

- (1) As provided in Section E.2, a Participant must commit its Internal Reserve up to the full amount of its Contingency Reserve Obligation before requesting Assistance Reserve.
- (2) If a Participant that has deployed its Contingency Reserve and needs additional capacity to meet the 15-minute criterion, that Participant may call another Participant for assistance. The responding Participant will make available its unused Contingency Reserve up to its Contingency Reserve Obligation.

The caller must:

- (a) state that the purpose of the call is to make a Reserve Sharing Request,
- (b) identify who is making the request,

- (c) identify the Qualifying Event it has experienced and the start time of the event,
 - (d) confirm that it committed to use Contingency Reserve up to the full amount of its Contingency Reserve Obligation to respond to the event,
 - (e) state the amount of Assistance Reserve that is required to make up the remaining deficiency, and
 - (f) agree with the responding Participant on the amount, start-time, and end-time of the Contingency Reserve to be entered into the AGC controller total. The end-time may be shortened thereafter, if the requesting Participant determines that it does not need Assistance Reserve through the original end-time.
- (3) If the Assistance Reserve made available and delivered from the responding Participant is insufficient to cover the Qualifying Event, the requesting Participant will cover the remaining deficit by requesting Assistance Reserve from another Participant.
- (4) As soon as possible, the requesting Participant must notify any intermediate wheeling balancing authority(s) of the scheduled delivery of Assistance Reserve and its duration. Each Participating Balancing Authority that is needed for intermediate wheeling will make transmission capacity available up to its maximum operating limit by any means necessary including the curtailment of interruptible schedules.
- (5) The Participant requesting assistance must re-establish its Contingency Reserve as soon as possible by adding generation, adjusting interchange schedules, or dropping load. As provided in Section F.3, a Participant that requests Assistance Reserve must relinquish the Assistance Reserve within 60 minutes of the initial event.
- (6) Any Participant that requests Assistance Reserve must contact the party within its organization that is responsible for energy scheduling and notify that party of the actions taken to request Assistance Reserve. The party responsible for scheduling must then contact its counterpart from the responding Participant to determine an agreed-upon hourly energy transaction and to agree on transaction wheeling amounts in accordance with the paths identified in Attachment D of this document.

c. Backup Reserve Sharing Procedure – Telephone Responses

The following responses may be appropriate for a Participant that receives a Reserve Sharing Request by telephone:

- (1) If a Participant that has deployed its Contingency Reserve needs additional capacity to meet the 15-minute criterion, that Participant may call another Participant for assistance.

The responding Participant will make available its unused Contingency Reserve up to its Contingency Reserve Obligation.

- (2) The Participant that is being asked to provide Assistance Reserve may make the following responses:
 - (a) confirm that the purpose of the call is to make a Reserve Sharing Request,
 - (b) confirm who is making the request,
 - (c) confirm the reason for the request (*e.g.*, identify the Qualifying Event and the start time of the event),
 - (d) confirm that the requesting Participant has committed to use Contingency Reserve up to the full amount of its Contingency Reserve Obligation to respond to the event,
 - (e) state the amount of Assistance Reserve available to the requesting Participant,
 - (f) agree with the requesting Participant on the amount, start-time, and end-time of the Assistance Reserve to be entered into the AGC controller total.
- (3) As soon as possible, the responding Participant should notify any intermediate wheeling balancing authority(s) of the scheduled delivery of Assistance Reserve energy and its duration. Each Participating Balancing Authority that is needed for intermediate wheeling will make transmission capacity available up to its maximum operating limit by any means necessary including the curtailment of interruptible schedules.
- (4) Any Participant that provides Assistance Reserve must contact the party within its organization that is responsible for energy scheduling and notify that party of the actions taken to provide Assistance Reserve. The party responsible for scheduling must then contact its counterpart from the requesting Participant to determine an agreed-upon hourly energy transaction.

3. Documentation

Any Participant that requests Assistance Reserve using the backup procedures in this Attachment E must document its load, generation, Contingency Reserve Obligation, and Contingency Reserve immediately before the Qualifying Event. It must document the amount of its capacity lost or other characteristics of the Qualifying Event, the amount and components of Contingency Reserve deployed, and the amount of Assistance Reserve requested and received. The requesting Participant must also comply with Attachment G, Backup Process for After-the Fact Reserve Sharing Tags.

NWPP RSG Verification Forms are available on the NWPP Website. The requesting Participant must send this documentation to all responding Participants, and to the NWPP Staff, on the next working day.

Attachment F

TRANSMISSION MAPPING AND TAG TEMPLATE CHANGE PROCESS

A. Process for Changing Delivery Paths Between NWPP Reserve Sharing Participants

1. Any Participant that wishes to request a change to the transmission mapping set forth in Attachment D must first obtain the agreement of all other Participants that would be affected by the requested change.
2. Participants must submit requests for changes to Attachment D to the NWPP Staff.
3. NWPP Staff will prepare and propose a revised draft of Attachment D.
4. The Participant(s) requesting the change must confirm with the NWPP Staff that the proposed revisions to Attachment D are as agreed.
5. All affected Participants must be given adequate time to make any software changes to downstream or legacy scheduling systems.
6. Participant(s) requesting the change must make any necessary NERC TSIN (Transmission System Information Network) and Western Interchange Tool (WIT) registrations.
7. The affected Participants must also request that the NWPP Staff arrange for any necessary revisions to tag templates corresponding to any changes to the transmission mapping in Attachment D.
8. NWPP Staff must approve requests for revisions to tag templates, and will communicate any approved tag template changes to Open Access Technology International, Inc. (OATI).
9. OATI will coordinate testing of the new or revised tag templates and confirm that the templates will pass WIT validations.
10. NWPP Staff and the affected Participants will determine an implementation date for the new templates.
11. NWPP Staff will advise all Participants of the implementation date for the revised templates.
12. OATI will make appropriate tag template changes effective on the implementation date.
13. Promptly following implementation, affected Participants will confirm that the tag template is functioning as expected.
14. NWPP Staff will update the Assistance Reserve energy delivery tag generator with the changes.

B. Process for Changing Tag Templates with No Change to Delivery Paths**(No Impact to Other Balancing Authorities)**

1. The Participant with changes will notify the NWPP Staff of any changes that need to be made to its tag templates.
2. The Participant with changes will make any necessary TSIN and WIT registrations.
3. NWPP Staff must approve the revised tag templates, and will communicate approved changes to OATI.
4. OATI will coordinate testing of new or revised tag templates and confirm that the templates will pass WIT validations.
5. NWPP Staff and the requesting Participant will determine an implementation date for the new tag templates.
6. NWPP Staff will advise all Participants of the implementation date for the revised templates.
7. OATI will make appropriate tag template changes effective on the implementation date.
8. Promptly following implementation, the requesting Participant will confirm that the templates are functioning as expected.
9. NWPP Staff will update the Assistance Reserve energy delivery tag generator with the changes.

C. Process for Adding a New Member to NWPP Reserve Sharing Program

1. A newly admitted Participant must submit a request to the NWPP Staff for changes as provided in Section A of this Attachment F. If a new Reserve Sharing Zone is required, Attachment C will be revised to reflect the addition of a new Reserve Sharing Zone as well.
2. New Participant(s) will provide to the NWPP Staff the information necessary to develop tag templates to reflect the inclusion of the new Participant(s).
3. NWPP Staff will populate the tag template generator with the new Participant(s)' data.
4. NWPP Staff will generate the new tag templates associated with the new Participant(s).
5. NWPP Staff will distribute these new tag templates to all Participants for review.

6. Participant(s) must review the new templates and implement any necessary changes to their own accounting and billing systems.
7. Simultaneously, the NWPP Staff will update the Reserve Sharing Computer System to include the new tag templates.
8. NWPP Staff must approve the new tag templates, and will communicate approved new templates to OATI.
9. OATI will coordinate testing of the new tag templates and confirm that the templates will pass WIT validations.
10. NWPP Staff and all Participants will determine an implementation date for the new templates.
11. NWPP Staff will advise all Participants of the implementation date for the revised templates.
12. OATI will make the new tag templates effective on the implementation date.
13. Promptly following implementation, all Participants will confirm that the templates are functioning as expected.

Attachment G

Backup Process for After-The-Fact Reserve Sharing Tags

A. Failure of Participant Internal Program or Reserve Sharing Computer System

If a Participant that has requested Assistance Reserve (or is providing Assistance Reserve) experiences a failure of any internal program related to reserve sharing, or if a Reserve Sharing Request is made or in effect during a time when the Reserve Sharing Computer System is not functioning, then the Participants receiving and providing Assistance Reserve energy will be responsible for all necessary after-the-fact tagging.

B. Failure of Automated After-the-Fact Tagging Process

If the automated tag creation process fails,

1. NWPP Staff will
 - a. contact OATI and coordinate the next possible time OATI can rerun automated tag creation for the event;
 - b. make reasonable efforts (and request that OATI make reasonable efforts) to give Participants at least 24 hours' advance notice before the reissuing of the tags, and if this is not possible, attempt to give notice as far in advance as feasible; and
 - c. notify Participants by e-mail distribution of the re-issuance of the tags.
2. If the affected Participants anticipate that the automated tag creation process will not be able to reissue the tags before the after-the-fact tagging deadline, the sink Participant will coordinate with the source Participants to facilitate the sink Participant's efforts to manually issue after-the-fact tags according to the most recent reserve sharing tag templates.

C. Replacing Denied Reserve Sharing Tags

3. If one Participant denies an after-the-fact the tag (properly or not), the denying Participant will coordinate with all other Participants to facilitate the denying Participant's efforts to manually reissue the after-the-fact tag(s).
 - a. If the problem with the original tag was due to an error in the tag template, the denying Participant will immediately notify all other Participants listed in the template of the necessary correction.

- b. Participants needing to correct a tag template will follow the appropriate procedures specified in Attachment F to make changes to the tag template.
4. If more than one Participant denies a tag, the sink Participant will coordinate with all other affected Participants to facilitate the sink Participant's efforts to manually reissue the after-the-fact tag.
 - a. If the problem with the original tag was due to an error in the tag template, the denying Participants will immediately notify all other Participants listed in the template of the necessary correction.
 - b. Participants needing to correct a tag template will follow the appropriate procedures specified in Attachment F to make changes to the tag template.



Attachment H

NWPP Reserve Sharing Program Participants

Alberta Electric System Operator (AESO)
Avista Corporation (AVA)
Balancing Authority of Northern California (BANC)
British Columbia Hydro and Power Authority (BCHA)
Bonneville Power Administration (BPAT)
Chelan County Public Utility District (CHPD)
Douglas County Public Utility District (DOPD)
Grant County Public Utility District (GCPD)
Idaho Power Company (IPCO)
NaturEner Power Watch, LLC (GWA)
NorthWestern (NWMT)
PacifiCorp East (PACE)
PacifiCorp West (PACW)
Portland General Electric (PGE)
Puget Sound Energy (PSE)
Seattle City Light (SCL)
NV Energy (Sierra Pacific Power Company) (SPP)
Tacoma Power (TPWR)
Turlock Irrigation District (TID)
Western Area Power Administration Upper Great Plains West (WAUW)



Attachment I

NERC Standard BAL-002-0 – Disturbance Control Performance

Introduction

1. **Title:** **Disturbance Control Performance**

2. **Number:** BAL-002-0

3. **Purpose:**

The purpose of the Disturbance Control Standard (DCS) is to ensure the Balancing Authority is able to utilize its Contingency Reserve to balance resources and demand and return Interconnection frequency within defined limits following a Reportable Disturbance. Because generator failures are far more common than significant losses of load and because Contingency Reserve activation does not typically apply to the loss of load, the application of DCS is limited to the loss of supply and does not apply to the loss of load.

4. **Applicability:**

4.1. Balancing Authorities

4.2. Reserve Sharing Groups (Balancing Authorities may meet the requirements of Standard 002 through participation in a Reserve Sharing Group.)

4.3. Regional Reliability Organizations

5. **Effective Date:** April 1, 2005

B. Requirements

R1. Each Balancing Authority shall have access to and/or operate Contingency Reserve to respond to Disturbances. Contingency Reserve may be supplied from generation, controllable load resources, or coordinated adjustments to Interchange Schedules.

R1.1. A Balancing Authority may elect to fulfill its Contingency Reserve obligations by participating as a member of a Reserve Sharing Group. In such cases, the Reserve Sharing Group shall have the same responsibilities and obligations as each Balancing Authority with respect to monitoring and meeting the requirements of Standard BAL-002.

R2. Each Regional Reliability Organization, sub-Regional Reliability Organization or Reserve Sharing Group shall specify its Contingency Reserve policies, including:

R2.1. The minimum reserve requirement for the group.

R2.2. Its allocation among members.

R2.3. The permissible mix of Operating Reserve – Spinning and Operating Reserve – Supplemental that may be included in Contingency Reserve.

R2.4. The procedure for applying Contingency Reserve in practice.

R2.5. The limitations, if any, upon the amount of interruptible load that may be included.

R2.6. The same portion of resource capacity (e.g. reserves from jointly owned generation) shall not be counted more than once as Contingency Reserve by multiple Balancing Authorities.

R3. Each Balancing Authority or Reserve Sharing Group shall activate sufficient Contingency Reserve to comply with the DCS.

R3.1. As a minimum, the Balancing Authority or Reserve Sharing Group shall carry at least enough Contingency Reserve to cover the most severe single contingency. All Balancing Authorities and Reserve Sharing Groups shall review, no less frequently

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Effective Date: April 1, 2005

- R3.2.** than annually, their probable contingencies to determine their prospective most severe single contingencies.
- R4.** A Balancing Authority or Reserve Sharing Group shall meet the Disturbance Recovery Criterion within the Disturbance Recovery Period for 100% of Reportable Disturbances. The Disturbance Recovery Criterion is:
- R4.1.** A Balancing Authority shall return its ACE to zero if its ACE just prior to the Reportable Disturbance was positive or equal to zero. For negative initial ACE values just prior to the Disturbance, the Balancing Authority shall return ACE to its pre-Disturbance value.
- R4.2.** The default Disturbance Recovery Period is 15 minutes after the start of a Reportable Disturbance. This period may be adjusted to better suit the needs of an Interconnection based on analysis approved by the NERC Operating Committee.
- R5.** Each Reserve Sharing Group shall comply with the DCS. A Reserve Sharing Group shall be considered in a Reportable Disturbance condition whenever a group member has experienced a Reportable Disturbance and calls for the activation of Contingency Reserves from one or more other group members. (If a group member has experienced a Reportable Disturbance but does not call for reserve activation from other members of the Reserve Sharing Group, then that member shall report as a single Balancing Authority.) Compliance may be demonstrated by either of the following two methods:
- R5.1.** The Reserve Sharing Group reviews group ACE (or equivalent) and demonstrates compliance to the DCS. To be in compliance, the group ACE (or its equivalent) must meet the Disturbance Recovery Criterion after the schedule change(s) related to reserve sharing have been fully implemented, and within the Disturbance Recovery Period.
- or
- R5.2.** The Reserve Sharing Group reviews each member's ACE in response to the activation of reserves. To be in compliance, a member's ACE (or its equivalent) must meet the Disturbance Recovery Criterion after the schedule change(s) related to reserve sharing have been fully implemented, and within the Disturbance Recovery Period.
- R6.** A Balancing Authority or Reserve Sharing Group shall fully restore its Contingency Reserves within the Contingency Reserve Restoration Period for its Interconnection.
- R6.1.** The Contingency Reserve Restoration Period begins at the end of the Disturbance Recovery Period.
- R6.2.** The default Contingency Reserve Restoration Period is 90 minutes. This period may be adjusted to better suit the reliability targets of the Interconnection based on analysis approved by the NERC Operating Committee.

C. Measures

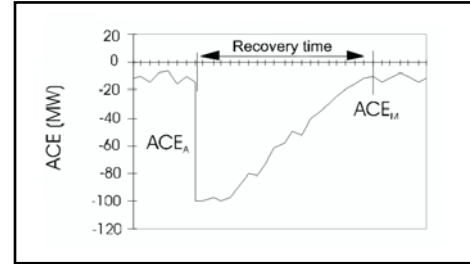
- M1.** A Balancing Authority or Reserve Sharing Group shall calculate and report compliance with the Disturbance Control Standard for all Disturbances greater than or equal to 80% of the magnitude of the Balancing Authority's or of the Reserve Sharing Group's most severe single contingency loss. Regions may, at their discretion, require a lower reporting threshold. Disturbance Control Standard is measured as the percentage recovery (R_i).

For loss of generation:

if $ACE_A < 0$

then

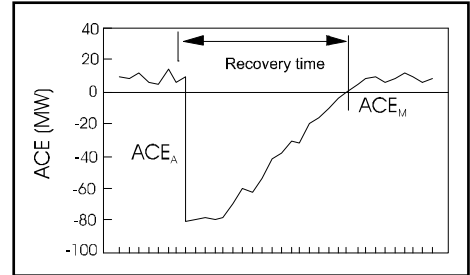
$$R_i = \frac{MW_{Loss} - \max(0, ACE_A - ACE_M)}{MW_{Loss}} * 100\%$$



if $ACE_A \geq 0$

then

$$R_i = \frac{MW_{Loss} - \max(0, -ACE_M)}{MW_{Loss}} * 100\%$$

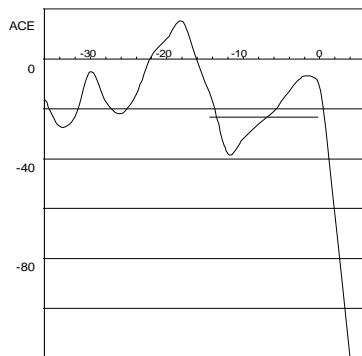


where:

- MW_{LOSS} is the MW size of the Disturbance as measured at the beginning of the loss,
- ACE_A is the pre-disturbance ACE,
- ACE_M is the maximum algebraic value of ACE measured within the fifteen minutes following the Disturbance. A Balancing Authority or Reserve Sharing Group may, at its discretion, set $ACE_M = ACE_{15 \text{ min}}$, and

The Balancing Authority or Reserve Sharing Group shall record the MW_{LOSS} value as measured at the site of the loss to the extent possible. The value should not be measured as a change in ACE since governor response and AGC response may introduce error.

The Balancing Authority or Reserve Sharing Group shall base the value for ACE_A on the average ACE over the period just prior to the start of the Disturbance (10 and 60 seconds prior and including at least 4 scans of ACE). In the illustration below, the horizontal line represents an averaging of ACE for 15 seconds prior to the start of the Disturbance with a result of $ACE_A = -25 \text{ MW}$.



The average percent recovery is the arithmetic average of all the calculated R_i 's for Reportable Disturbances during a given quarter. Average percent recovery is similarly calculated for excludable Disturbances.

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Effective Date: April 1, 2005

D. Compliance

1. Compliance Monitoring Process

Compliance with the DCS shall be measured on a percentage basis as set forth in the measures above.

Each Balancing Authority or Reserve Sharing Group shall submit one completed copy of DCS Form, “NERC Control Performance Standard Survey – All Interconnections” to its Resources Subcommittee Survey Contact no later than the 10th day following the end of the calendar quarter (i.e. April 10th, July 10th, October 10th, January 10th). The Regional Reliability Organization must submit a summary document reporting compliance with DCS to NERC no later than the 20th day of the month following the end of the quarter.

1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

1.2. Compliance Monitoring Period and Reset Timeframe

Compliance for DCS will be evaluated for each reporting period. Reset is one calendar quarter without a violation.

1.3. Data Retention

The data that support the calculation of DCS are to be retained in electronic form for at least a one-year period. If the DCS data for a Reserve Sharing Group and Balancing Area are undergoing a review to address a question that has been raised regarding the data, the data are to be saved beyond the normal retention period until the question is formally resolved.

1.4. Additional Compliance Information

Reportable Disturbances – Reportable Disturbances are contingencies that are greater than or equal to 80% of the most severe single Contingency. A Regional Reliability Organization, sub-Regional Reliability Organization or Reserve Sharing Group may optionally reduce the 80% threshold, provided that normal operating characteristics are not being considered or misrepresented as contingencies. Normal operating characteristics are excluded because DCS only measures the recovery from sudden, unanticipated losses of supply-side resources.

Simultaneous Contingencies – Multiple Contingencies occurring within one minute or less of each other shall be treated as a single Contingency. If the combined magnitude of the multiple Contingencies exceeds the most severe single Contingency, the loss shall be reported, but excluded from compliance evaluation.

Multiple Contingencies within the Reportable Disturbance Period – Additional Contingencies that occur after one minute of the start of a Reportable Disturbance but before the end of the Disturbance Recovery Period can be excluded from evaluation. The Balancing Authority or Reserve Sharing Group shall determine the DCS compliance of the initial Reportable Disturbance by performing a reasonable estimation of the response that would have occurred had the second and subsequent contingencies not occurred.

Multiple Contingencies within the Contingency Reserve Restoration Period – Additional Reportable Disturbances that occur after the end of the Disturbance Recovery Period but before the end of the Contingency Reserve Restoration Period shall be reported and included in the compliance evaluation. However, the Balancing Authority or Reserve Sharing Group can request a waiver from the Resources

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Subcommittee for the event if the contingency reserves were rendered inadequate by prior contingencies and a good faith effort to replace contingency reserve can be shown.

2. Levels of Non-Compliance

Each Balancing Authority or Reserve Sharing Group not meeting the DCS during a given calendar quarter shall increase its Contingency Reserve obligation for the calendar quarter (offset by one month) following the evaluation by the NERC or Compliance Monitor [e.g. for the first calendar quarter of the year, the penalty is applied for May, June, and July.] The increase shall be directly proportional to the non-compliance with the DCS in the preceding quarter. This adjustment is not compounded across quarters, and is an additional percentage of reserve needed beyond the most severe single Contingency. A Reserve Sharing Group may choose an allocation method for increasing its Contingency Reserve for the Reserve Sharing Group provided that this increase is fully allocated.

A representative from each Balancing Authority or Reserve Sharing Group that was non-compliant in the calendar quarter most recently completed shall provide written documentation verifying that the Balancing Authority or Reserve Sharing Group will apply the appropriate DCS performance adjustment beginning the first day of the succeeding month, and will continue to apply it for three months. The written documentation shall accompany the quarterly Disturbance Control Standard Report when a Balancing Authority or Reserve Sharing Group is non-compliant.

- 2.1. Level 1:** Value of the average percent recovery for the quarter is less than 100% but greater than or equal to 95%.
- 2.2. Level 2:** Value of the average percent recovery for the quarter is less than 95% but greater than or equal to 90%.
- 2.3. Level 3:** Value of average percent recovery for the quarter is less than 90% but greater than or equal to 85%.
- 2.4. Level 4:** Value of average percent recovery for the quarter is less than 85%.

E. Regional Differences

None identified.

Version History

ON	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
0	February 14, 2006	Revised graph on page 3, “10 min.” to “Recovery time.” Removed fourth bullet.	Errata

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Reserve Sharing Program 1-18-06
Current Approved Version: 10-5-2011

Attachment J

WECC STANDARD BAL-STD-002-0 – Operating Reserves

A. Introduction

1. **Title:** Operating Reserves
2. **Number:** BAL-STD-002-0
3. **Purpose:** Regional Reliability Standard to address the Operating Reserve requirements of the Western Interconnection.

4. Applicability

4.1.1 This criterion applies to each Responsible Entity that is (i) a Balancing Authority or a member of a Reserve Sharing Group that does not designate its Reserve Sharing Group as its agent, or (ii) a Reserve Sharing Group. A Responsible Entity that is a Balancing Authority and a member of a Reserve Sharing Group is subject to this criterion only as described in Section A.4.1.2. A Responsible Entity that is a member of a Reserve Sharing Group is not subject to this criterion on an individual basis.

4.1.2 Responsible Entities that are members of a Reserve Sharing Group may designate in writing to WECC a Responsible Entity to act as agent for purposes of this criterion for each such Reserve Sharing Group. Such Reserve Sharing Group agents shall be responsible for all data submission requirements under Section D of this Reliability Agreement. Unless a Reserve Sharing Group agent identifies individual Responsible Entities responsible for noncompliance at the time of data submission, sanctions for noncompliance shall be assessed against the agent on behalf of the Reserve Sharing Group, and it shall be the responsibility of the members of the Reserve Sharing Group to allocate responsibility for such noncompliance. If a Responsible Entity that is a member of a Reserve Sharing Group does not designate in writing to WECC a Responsible Entity to act as agent for purposes of this criterion for each such Reserve Sharing Group, such Responsible Entity shall be subject to this criterion on an individual basis.

5. **Effective Date:** This Western Electricity Coordinating Council Regional Reliability Standard will be effective when approved by the Federal Energy Regulatory Commission under Section 215 of the Federal Power Act. This Regional Reliability Standard shall be in effect for one year from the date of Commission approval or until a North American Standard or a revised Western Electricity Coordinating Council Regional Reliability Standard goes into place, whichever occurs first. At no time shall this regional Standard be enforced in addition to a similar North American Standard.

B. Requirements

WR1.

The reliable operation of the interconnected power system requires that adequate generating capacity be available at all times to maintain scheduled frequency and avoid loss of firm load following transmission or generation contingencies. This generating capacity is necessary to:

- supply requirements for load variations.
- replace generating capacity and energy lost due to forced outages of generation or transmission equipment.
- meet on-demand obligations.

- replace energy lost due to curtailment of interruptible imports.
- a. Minimum Operating Reserve. Each Balancing Authority shall maintain minimum Operating Reserve which is the sum of the following:
 - (i) Regulating reserve. Sufficient Spinning Reserve, immediately responsive to Automatic Generation Control (AGC) to provide sufficient regulating margin to allow the Balancing Authority to meet NERC's Control Performance Criteria (see BAL-001-0).
 - (ii) Contingency reserve. An amount of Spinning Reserve and Nonspinning Reserve (at least half of which must be Spinning Reserve), sufficient to meet the NERC Disturbance Control Standard BAL-002-0, equal to the greater of:
 - (a) The loss of generating capacity due to forced outages of generation or transmission equipment that would result from the most severe single contingency; or
 - (b) The sum of five percent of the load responsibility served by hydro generation and seven percent of the load responsibility served by thermal generation.

The combined unit ramp rate of each Balancing Authority's on-line, unloaded generating capacity must be capable of responding to the Spinning Reserve requirement of that Balancing Authority within ten minutes
 - (iii) Additional reserve for interruptible imports. An amount of reserve, which can be made effective within ten minutes, equal to interruptible imports.
 - (iv) Additional reserve for on-demand obligations. An amount of reserve, which can be made effective within ten minutes, equal to on-demand obligations to other entities or Balancing Authorities.
- b. Acceptable types of Nonspinning Reserve. The Nonspinning Reserve obligations identified in subsections a(ii), a(iii), and a(iv), if any, can be met by use of the following:
 - (i) interruptible load;
 - (ii) interruptible exports;
 - (iii) on-demand rights from other entities or Balancing Authorities;
 - (iv) Spinning Reserve in excess of requirements in subsections a(i) and a(ii); or
 - (v) off-line generation which qualifies as Nonspinning Reserve.
- c. Knowledge of Operating Reserve. Operating Reserves shall be calculated such that the amount available which can be fully activated in the next ten minutes will be known at all times.

- d. Restoration of Operating Reserve. After the occurrence of any event necessitating the use of Operating Reserve, that reserve shall be restored as promptly as practicable. The time taken to restore reserves shall not exceed 60 minutes (Source: WECC Criterion)

C. Measures

WM1.

Except within the first 60 minutes following an event requiring the activation of Operating Reserves, a Responsible Entity identified in Section A.4 must maintain 100% of required Operating Reserve levels based upon data averaged over each clock hour. Following every event requiring the activation of Operating Reserves, a Responsible Entity identified in Section A.4 must re-establish the required Operating Reserve levels within 60 minutes. (Source: Compliance Standard)

D. Compliance

1. Compliance Monitoring Process

1.1 Compliance Monitoring Responsibility

Western Electricity Coordinating Council (WECC)

1.2 Compliance Monitoring Period

At Occurrence and Quarterly

By no later than 5:00 p.m. Mountain Time on the first Business Day following the day on which an instance of non-compliance occurs (or such other date specified in Form A.1(a)), the Responsible Entities identified in Section A.4 shall submit to the WECC office Operating Reserve data in Form A.1(a) (available on the WECC web site) for each such instance of non-compliance. On or before the tenth day of each calendar quarter (or such other date specified in Form A.1(b)), the Responsible Entities identified in Section A.4 (including Responsible Entities with no reported instances of non-compliance) shall submit to the WECC office a completed Operating Reserve summary compliance Form A.1(b) (available on the WECC web site) for the immediately preceding calendar quarter.

1.3 Data Retention

Data will be retained in electronic form for at least one year. The retention period will be evaluated before expiration of one year to determine if a longer retention period is necessary. If the data is being reviewed to address a question of compliance, the data will be saved beyond the normal retention period until the question is formally resolved. (Source: NERC Language)

1.4 Additional Compliance Information

For purposes of applying the sanctions specified in [Sanction Table](#) for violations of this criterion, the "Sanction Measure" is Average Generation and the "Specified Period" is the most recent calendar month. (Source: Sanctions)

2. Levels of Non-Compliance Sanction

Measure: Average Generation

- 2.1. Level 1:** There shall be a Level 1 non-compliance if any of the following conditions exist:
 - 2.1.1** One instance during a calendar month in which the Balancing Authority's or the Reserve Sharing Group's Operating Reserve is less than 100% but greater than or equal to 90% of the required Operating Reserve.
- 2.2. Level 2:** There shall be a Level 2 non-compliance if any of the following conditions exist:
 - 2.2.1** One instance during a calendar month in which the Balancing Authority's or the Reserve Sharing Group's Operating Reserve is less than 90% but greater than or equal to 80% of the required Operating Reserve.
- 2.3. Level 3:** There shall be a Level 3 non-compliance if any of the following conditions exist:
 - 2.3.1** One instance during a calendar month in which the Balancing Authority's or the Reserve Sharing Group's Operating Reserve is less than 80% but greater than or equal to 70% of the required Operating Reserve.
- 2.4. Level 4:** There shall be a Level 4 non-compliance if any of the following conditions exist:
 - 1.4.1.** One instance during a calendar month in which the Balancing Authority's or the Reserve Sharing Group's Operating Reserve is less than 70% of the required Operating Reserve.

E. Regional Differences

Version History - Shows Approval History and Summary of Changes in the Action Field.

Version	Date	Action	Change Tracking
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Sanction Table

Sanctions for non-compliance with respect to each criterion in Section B Requirements shall be assessed pursuant to the following table. All monetary sanctions shall also include sending of Letter (B).

Level of Non-	Number of Occurrences at a Given Level within Specified Period			
	1	2	3	4 or more
Level 1	Letter (A)	Letter (B)	Higher of \$1,000 or \$1 per MW of Sanction Measure	Higher of \$2,000 or \$2 per MW of Sanction Measure
Level 2	Letter (B)	Higher of \$1,000 or \$1 per MW of Sanction Measure	Higher of \$2,000 or \$2 per MW of Sanction Measure	Higher of \$4,000 or \$4 per MW of Sanction Measure
Level 3	Higher of \$1,000 or \$1 per MW of Sanction Measure	Higher of \$2,000 or \$2 per MW of Sanction Measure	Higher of \$4,000 or \$4 per MW of Sanction Measure	Higher of \$6,000 or \$6 per MW of Sanction Measure
Level 4	Higher of \$2,000 or \$2 per MW of Sanction Measure	Higher of \$4,000 or \$4 per MW of Sanction Measure	Higher of \$6,000 or \$6 per MW of Sanction Measure	Higher of \$10,000 or \$10 per MW of Sanction Measure

Letter (A): Letter to Responsible Entity's Chief Executive Officer informing the Responsible Entity of noncompliance with copies to NERC, WECC Member Representative, and WECC Operating Committee Representative 1.

Letter (B): Identical to Letter (A), with additional copies to (i) Chairman of the Board of Responsible Entity (if different from Chief Executive Officer), and to (ii) state or provincial regulatory agencies with jurisdiction over Responsible Entity, and, in the case of U.S. entities, FERC, and Department of Energy, if such government entities request such information.

The "Specified Period" and the "Sanction Measure" are as specified in Section D1.4 for each criterion.

Sanctions shall be assessed for all instances of non-compliance within a Specified Period. For example, if a Responsible Entity had two instances of Level 1 non-compliance and

¹ Copies of Letter A and Letter B will be sent to WECC Member Representative and WECC Operating Committee Representative when the Generator Operator is a WECC member.

one instance of Level 3 non-compliance for a specific criterion in the first Specified Period, it would be assessed the sanction from Column 2 of the Level 1 row, and the sanction from Column 1 of the Level 3 row.

If the Responsible Entity fails to comply with a given criterion for two or more consecutive Specified Periods, the sanctions assessed at each level of noncompliance for the most recent Specified Period shall be the sanction specified in the column immediately to the right of the indicated sanction. For example, if a Responsible Entity fails to comply with a given criterion for two consecutive Specified Periods, and in the second Specified Period the Responsible Entity has one instance of Level 1 non-compliance and two instances of Level 3 non-compliance, it would be assessed the sanction from Column 2 of the Level 1 row, and the sanction from Column 3 of the Level 3 row. If the sanction assessed at the highest level is the sanction in Column 4, no such modification of the specified sanction shall occur.

DEFINITIONS

Unless the context requires otherwise, all capitalized terms shall have the meanings assigned in this Standard and as set out below:

Area Control Error or ACE means the instantaneous difference between net actual and scheduled interchange, taking into account the effects of Frequency Bias including correction for meter error.

Automatic Generation Control or AGC means equipment that automatically adjusts a Control Area's generation from a central location to maintain its interchange schedule plus Frequency Bias.

Average Generation means the total MWh generated within the Balancing Authority Operator's Balancing Authority Area during the prior year divided by 8760 hours (8784 hours if the prior year had 366 days).

Business Day means any day other than Saturday, Sunday, or a legal public holiday as designated in section 6103 of title 5, U.S. Code.

Disturbance means (i) any perturbation to the electric system, or (ii) the unexpected change in ACE that is caused by the sudden loss of generation or interruption of load.

Extraordinary Contingency shall have the meaning set out in Excuse of Performance, section B.4.c

Frequency Bias means a value, usually given in megawatts per 0.1 Hertz, associated with a Control Area that relates the difference between scheduled and actual frequency to the amount of generation required to correct the difference.

Nonspinning Reserve means that Operating Reserve not connected to the system but capable of serving demand within a specified time, or interruptible load that can be removed from the system in a specified time.

Operating Reserve means that capability above firm system demand required to provide for regulation, load-forecasting error, equipment forced and scheduled outages and local area protection. Operating Reserve consists of Spinning Reserve and Nonspinning Reserve.

Spinning Reserve means unloaded generation which is synchronized and ready to serve additional demand. It consists of Regulating reserve and Contingency reserve (as each are described in Sections B.a.i and ii).

EXCUSE OF PERFORMANCE

A. Excused Non-Compliance

Non-compliance with any of the reliability criteria contained in this Standard shall be excused and no sanction applied if such non-compliance results directly from one or more of the actions or events listed below.

B. Specific Excuses

1. Governmental Order

The Reliability Entity's compliance with or action under any applicable law or regulation or other legal obligation related thereto or any curtailment, order, regulation or restriction imposed by any governmental authority (other than the Reliability Entity, if the Reliability Entity is a municipal corporation or a federal, state, or provincial governmental entity or subdivision thereof).

2. Order of Reliability Coordinator

The Reliability Entity's compliance or reasonable effort to comply with any instruction, directive, order or suggested action ("Security Order") by the WECC Reliability Coordinator for the WECC subregion within which the Reliability Entity is operating, provided that the need for such Security Order was not due to the Reliability Entity's non-compliance with (a) the WECC Reliability Criteria for Transmission System Planning, (b) the WECC Power Supply Design Criteria, (c) the WECC Minimum Operating Reliability Criteria, or (d) any other WECC reliability criterion, policy or

procedure then in effect (collectively, "WECC Reliability Standards"), and provided further that the Reliability Entity in complying or attempting to comply with such Security Order has taken all reasonable measures to minimize Reliability Entity's noncompliance with the reliability criteria.

3. Protection of Facilities

Any action taken or not taken by the Reliability Entity which, in the reasonable judgment of the Reliability Entity, was necessary to protect the operation, performance, integrity, reliability or stability of the Reliability Entity's computer system, electric system (including transmission and generating facilities), or any electric system with which the Reliability Entity's electric system is interconnected, whether such action occurs automatically or manually; provided that the need for such action or inaction was not due to Reliability Entity's non-compliance with any WECC Reliability Standard and provided further that Reliability Entity could not have avoided the need for such action or inaction through reasonable efforts taken in a timely manner. Reasonable efforts shall include shedding load, disconnecting facilities, altering generation patterns or schedules on the transmission system, or purchasing energy or capacity, except to the extent that the Reliability Entity demonstrates to the WECC Staff and/or the RCC that in the particular circumstances such action would have been unreasonable.

4. Extraordinary Contingency

- a.** Any Extraordinary Contingency (as defined in subsection c); provided that this provision shall apply only to the extent and for the duration that the Extraordinary Contingency actually and reasonably prevented the Reliability Entity from complying with any applicable reliability criteria; and provided further that Reliability Entity took all reasonable efforts in a timely manner to mitigate the effects of the Extraordinary Contingency and to resume full compliance with all applicable reliability criteria contained in this Reliability Agreement. Reasonable efforts shall include shedding load, disconnecting facilities, altering generation patterns or schedules on the transmission system, or purchasing energy or capacity, except to the extent that the Reliability Entity

demonstrates to the WECC Staff and/or the RCC that in the particular circumstances such action would have been unreasonable. Reasonable efforts shall not include the settlement of any strike, lockout or labor dispute.

- b. Any Reliability Entity whose compliance is prevented by an Extraordinary Contingency shall immediately notify the WECC of such contingency and shall report daily or at such other interval prescribed by the WECC the efforts being undertaken to mitigate the effects of such contingency and to bring the Reliability Entity back into full compliance.
- c. An Extraordinary Contingency means any act of God, actions by a non-affiliated third party, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, earthquake, explosion, accident to or breakage, failure or malfunction of machinery or equipment, or any other cause beyond the Reliability Entity's reasonable control; provided that prudent industry standards (ms., maintenance, design, operation) have been employed; and provided further that no act or cause shall be considered an Extraordinary Contingency if such act or cause results in any contingency contemplated in any WECC Reliability Standard (e.g., the "Most Severe Single Contingency" as defined in the WECC Reliability Criteria or any lesser contingency).

5. Participation in Field Testing

Any action taken or not taken by the Reliability Entity in conjunction with the Reliability Entity's involvement in the field testing (as approved by either the WECC Operating Committee or the WECC Planning Coordination Committee) of a new reliability criterion or a revision to an existing reliability criterion where such action or non-action causes the Reliability Entity's non-compliance with the reliability criterion to be replaced or revised by the criterion being field tested; provided that Reliability Entity's noncompliance is the result of Reliability Entity's reasonable efforts to participate in the field testing.



Attachment K

Northwest Power Pool Reserve Sharing Group

Most Severe Single Contingency Tables

TABLE 1

Plant	Reporting/ Operating BA	MSSC MW	Plant Capability MW	BALANCING AUTHORITIES PARTICIPATING JOINTLY IN DYNAMICALLY TRANSFERRED GENERATION												
				AVA	BPA	CHPD	DOPD	GCPD	IPC	NWMT	PACW	PGE	PSE	SCL	SPP	TPWR
Rock Island	CHPD	108	606			✓							✓			
Rocky Reach - River Crossing 7-8- 9	CHPD	384	1,272	✓		✓	✓					✓	✓	✓		
Wells	DOPD	84	840	✓			✓					✓	✓	✓		
Priest Rapids - 4 units	GCPD	372	930	✓				✓				✓	✓	✓	✓	✓
Wanapum - 4 units	GCPD	388	970	✓				✓				✓	✓	✓		
Colstrip	NWMT	740	2,094	222							751	148	296	677		
Jim Bridger - 2 units	PACW	1,100	2,120							707		1,413				
Boardman	PGE	584	584		58					58			468			



TABLE 2

Plant	Reporting/ Operating BA	MSSC MW	Plant Capability MW	BALANCING AUTHORITIES PARTICIPATING JOINTLY IN GENERATION NOT DYNAMICALLY SIGNALLED												
				AVA	BPA	CHPD	DOPD	GCPD	IPC	NWMT	PACW	PGE	PSE	SCL	SPP	TPWR
Valmy	SPP	268	522						261						261	



TABLE 3

Plant	Reporting BA	Typically Reported MSSC MW	Plant Capability MW
Genesee #3	AESO	466	1246
Noxon Plant RAS Trip	AVA	540	550
Cosumnes	BANC	250	500
Revelstoke - 3 units	BCHA	1,505	2,505
Columbia River Generating Station	BPAT	1,150	1,150
Rocky Reach - River Crossing 7-8-9	CHPD	384	1,272
Wells	DOPD	84	840
Wanapum - 4 units	GCPD	388	970
NaturEner Power Watch	GWA	205	205
Brownlee	IPC	250	714
Colstrip	NWMT	740	2,094
Current Creek	PACE	450	580
Jim Bridger - 2 units on RAS	PACW	1,100	2,120
Boardman	PGE	584	584
Poison Springs – Wind Ridge Wind Ridge - Wanapum	PSE	260	364
Boundary	SCL	203	1,051
West Tracy	SPP	290	600
Walnut Energy Center	TID	129	258
Mossyrock	TPWR	185	355
Fort Peck	WAUW	44	64

DOCUMENTATION HISTORY

Updates:	Date:
NWPP Reserve Sharing Program	1-18-2006
Accommodation for new Balancing Authorities: SMUD & TID	6-07-2007
Combining of SPP and PACE zones into SPP-PACE zone	3-31-2008
Update of section D.3 for jointly owned generation	5-18-2008
Accommodation for new Balancing Authorities: GWA	10-13-2008
Updated terminology and addition of Attachments F, G, and H.	1-30-2009
Update of Attachment D to reflect tag template updates	3-31-2009
Update for requirement omission from 10-13-2008 version to 01-30-2009 version	3-31-2009
Clarity to sections I.5.1 and H.2	4-8-2009
Update for computer failure, continuance to deliver reserve for full 60 minutes	4-8-2009
Clarification to Attachment B – Covered contingencies	5-12-2009
Update to Attachment B – Loss of wind generation due to temperature	7-1-2009
Grammar revision to definition of “Reportable Disturbance”	7-30-2009
Accommodation of information for the ACE Diversity Interchange (ADI) program	10-15-2009
Update of Attachment D – transmission mapping between NWMT and PGE	11-1-2009
Clarifying revisions and reorganization throughout; addition of language to Attachment B specifying Operating Committee authority to designate additional “Qualifying Events”; addition of Attachment K	10-18-2010
British Columbia Hydro and Power Authority NERC Registry acronym change from BCTC to BCHA	12-1-2010
Addition of definition of “RSG Committee”; replacement of most references to Operating Committee and all references to NWPP Reserve Sharing Subcommittee with references to RSG Committee; Updates of Attachment K	4-6-2011
Revision to Attachment B – addition of energy emergency as a Qualifying Event	10-5-2011
Update to section K.3. Financial Settlement with Powerdex Mid-Columbia Hourly	1-1-2012