Attachment a

Source Document

NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Compliance Audit Report
Public Version

Pacific Northwest Reliability Coordinator
September 19–September 21, 2007

Confidential Information (Including Privileged and Critical Energy Infrastructure Information) Has Been Removed

May 10, 2010

to ensure the reliability of the bulk power system

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For Public Release - August 26, 2010

Executive Summary

The on-site compliance audit of the Pacific Northwest Security Coordinator (PNSC) was conducted on September 19–21, 2007. The audit team evaluated PNSC compliance with fourteen reliability standards identified in the NERC 2007 Implementation Plan for the period of the twelve months or monitoring time frames specified in each reliability standard and six additional reliability standards as determined by WECC, the regional entity. The audit team also evaluated PNSC progress with 6 mitigation plans. The audit team interviewed PNSC employees representing subject matter expertise and reviewed accompanying documentation presented as evidence of compliance. Evidence was also obtained through primary control center and backup control center observation and or inspection.

The findings of the audit are based on the state of compliance at the time of the audit and do not reflect past compliance activities or activities that will be completed in the future. PNSC provided evidence to the audit team for all fourteen reliability standards that were audited. The audit team found possible compliance violations with the following reliability standards.

- CIP-001-1 R4
- EOP-006-1 R1
- EOP-006-1 R3
- EOP-006-1 R6
- EOP-008-0 R1.6
- IRO-001-1 R4
- IRO-001-1 R7
- IRO-004-1 R1
- IRO-004-1 R6
- IRO-014-1 R4
- TOP-003-0 R4

The possible compliance violations will be processed through the WECC's regional compliance monitoring and enforcement program. Any further actions related to possible compliance violations will be through that process.

This audit report depicts all activities performed by the audit team during the audit. Some information discussed during the course of the audit is non-public and was redacted from the public posting version of this report.

The audit activities on site were extended one additional day due to factors involving the amount of documented evidence presented by PNSC. A significant amount of documented evidence provided by PNSC included recent revision dates and the audit team needed the previous versions in order to verify compliance for the entire monitoring period. PNSC was supportive in locating the previous revisions and additional documents requested by the audit team. Other evidentiary documentation provided by PNSC was determined irrelevant to the scope of the compliance audit by the audit team.

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Audit Process

The compliance audit process steps are detailed in the NERC CMEP. The NERC CMEP generally conforms to the United States Government Accountability Office Government Auditing Standards and other generally accepted audit practices.

Objectives

All registered entities are subject to audit for compliance with all reliability standards applicable to the functions for which the registered entity is registered.[1] The audit objectives are:

- Independently review PNSC compliance with the requirements of the reliability standards that are applicable to PNSC based on the PNSC's registered function as an RC.
- Validate compliance with applicable reliability standards from the NERC 2007 Implementation Plan list of actively monitored standards and six additional reliability standards as determined by WECC, the regional entity.
- Validate evidence of self-reported violations and previous self-certifications, confirm compliance with other requirements of the reliability standards, and review the status of associated mitigation plans.
- Document the PNSC's corporate compliance culture.

Scope

This PNSC on-site compliance audit was done as a regular periodic scheduled audit. The compliance audit was performed by an audit team consisting of NERC staff and WECC staff.
The reliability standards reviewed for compliance in the PNSC compliance audit included all of the applicable, actively monitored, reliability standards in the NERC 2007 Implementation Plan (14) plus 6 additional reliability standard applicable to the RC functions. The additional standards reviewed are listed below:

- COM-002-2
- EOP-002-2
- IRO-002-1
- IRO-003-2
- IRO-005-2
- IRO-006-3

Self-reported violations and the corresponding mitigation plans were reviewed for the status of PNSC's progress or completion as part of the scope of the on-site audit. PNSC self-reported violations to six reliability standards.

In addition the CIP-002 through CIP-009 reliability standards were reviewed for progress. For the 2007 program reliability standards are monitored based on the last twelve months or the retention periods and monitoring timeframes specified in each reliability standard. The list of reliability standards along with their corresponding monitoring timeframes and PNSC applicability are listed in the findings section of this report.

The audit team assessed PNSC's internal corporate compliance culture while on-site. Details of this review are contained in the On-Site section of this report.

Confidentiality and Conflict of Interest

[1] North American Electric Reliability Corporation CMEP, paragraph 3.1, Compliance Audits

Confidentiality agreements, work history and conflict of interest forms executed by the NERC staff, WECC staff, and WECC independent contractor were provided to the audited entity in advance of the audit. Also, PNSC was provided biographies of each of the audit team members. PNSC was given an opportunity to object to an audit team member on the basis of a possible conflict of interest or the existence of other circumstances that could interfere with the audit team member's impartial performance of duties. PNSC accepted the audit team member participants with no objections. In addition, the audit team provided PNSC signed "Non-BPA Computing Authorization" forms as the audit was held at Bonneville Power facilities.

On-site Audit

Compliance audits of WECC Reliability Coordinators are scheduled on a minimum 3 year basis. PNSC was notified sixty days before the on-site audit of the list of standards to be audited. This notification gives the registered entity adequate notice of a request for evidence to validate compliance during the on-site audit.

The audit team leader provided a list of applicable reliability standards and an audit agenda to PNSC before the audit. PNSC was asked to submit a reference list of evidence for each requirement in the standards, and a documentation excel spreadsheet used by PNSC to identify the applicable documents for each reliability requirement along with a listing of its subject matter expert for each reliability standard. WECC provided PNSC folders which contained the reliability standards audit worksheets (RSAW) and a copy of the reliability standard. The evidence was requested to be placed in folders and provided to the audit team for review when the audit team arrived on site. The audit team lead provided PNSC with the audit team assignments, listing which audit sub-team was responsible for which reliability standard. A letter explaining the legalities of compliance monitoring and data collection authority was provided to PNSC prior to the audit. Data collection, agenda, team assignments and information concerning the audit process was covered during the audit overview presentation by the audit team leader.

The audit team leader requested interviews with PNSC employees representing subject matter expertise representing all of the registered functions of PNSC. These interviews were performed to validate the documented evidence provided. During the review of evidence provided by PNSC each audit sub-team developed questions, including scenario type questions to verify the evidence and validate PNSC's processes. The interviews in conjunction with the evidence provide the audit team with a basis for professional judgment when validating compliance with reliability standards.

As noted in the Executive Summary, the audit activities on site were extended one additional day due to factors involving the amount of documented evidence presented by PNSC.

The audit team assessed PNSC's corporate compliance culture by performing a review of PNSC's internal compliance program. The audit team used WECC's "Compliance Program Audit Worksheet" (CPAW) to evaluate PNSC's internal compliance program. This worksheet provides questions with associated metrics to quantify an entity's internal compliance programs.

The audit team reviewed a document provided by PNSC which consisted of an unsigned memorandum from PNSC Security Coordinator to all its Service Providers, dated September 17, 2007. Service providers are the PNSC reliability coordinator system operators which are contract employees. The document appoints the Lead Reliability Coordinator as the PNSC Compliance Officer. This person occupies the position of Compliance Officer on a part time basis. The audit team found this to be in conflict with the lead reliability coordinator's main duties as a supervisor of Reliability Coordinators. Also, the audit team found that oversight of the Compliance Officer is done by the President of the PNSC. This officer is directly responsible for the performance of the reliability coordinators and their compliance with all applicable NERC Reliability Standards. The

position of the lead coordinator also reports to this officer. The document included a reference to a member of the PNSC Board holding a position identified as the "Compliance Issues position" to which the PNSC Compliance Officer has direct access.

Based on the documentation and discussions with PNSC staff the audit team determined PNSC does not have a viable internal compliance program.

Methodology

Audit Overview

The PNSC On-site Compliance Audit began at 08:00 a.m. on September 19, 2007 with an audit overview presentation by the audit team leader. Each member of the audit team was introduced and professional affiliation identified. The staff of PNSC was introduced, and general housekeeping matters explained. The audit team leader addressed confidentiality issues and discussed the planned agenda for the next three days. A brief description of the differences between readiness evaluations and compliance audits was provided to PNSC. The scope methodology of the compliance audit was also covered. The audit team leader discussed applicable references to 18 CFR 39, Rules of Procedure and the CMEP.

Other items covered during the presentation were data collection authority, violations, mitigations plans, final audit reports, feedback forms and how those areas applied to PNSC specifically. The audit team leader explained that PNSC must provide evidence of compliance with the audited reliability standards. Failure to provide evidence of compliance by PNSC will result in a possible compliance violation finding. Also, the audit team lead discussed timelines concerning possible violation and PNSC's right to due process.

The Manager of PNSC's operations introduced PNSC staff members participating in the audit and provided a presentation of PNSC's overall business structure and activities.

Audit

The audit team generally followed an agenda that was provided in advance to PNSC. The audit team was flexible with the availability of the PNSC audit participants when conducting the audit. The audit team worked in three sub-teams for most of the audit process, except during team briefings, and working lunches to discuss issues and seek team consensus.

PNSC's lead reliability coordinator was the point of contact for the audit team. PNSC staff responded by providing evidence in the form of reports, procedures, plans, studies, screen shots, voice recordings and other forms of evidence. When the team was not satisfied with the appropriateness (quality) and sufficiency (quantity) of the evidence, the audit sub-team would ask for additional documentation as well as perform follow-up interviews. The sub-team would record the evidence presented to satisfy the requirement and the team's recommendation on that requirement using the RSAW worksheet. PNSC was not asked to create documentation in these instances, only to submit existing evidence in addition to what was already submitted.

After completing a review of all applicable requirements in the standard, the overall compliance to that standard was reviewed first by the sub-teams and then by the audit team leader. Any concerns or dissention with the recommendation was offered and the audit team leader would solicit consensus among the team members. Dialog would ensue to the point of decision on the part of the audit team leader. Following this review, the RSAW worksheet would be updated with the compliance recommendation.

Each audit sub-team had the opportunity to tour the PNSC control center and was able to interview several RC System Operators on shift at the time. The primary control room tour confirmed that evidence presented as company policy, and other procedures that were presented as evidence are readily available to the system operators.

The auditing of all applicable standards was completed on September 21, 2007. The audit team met to review and discuss the findings. The audit team leader began to develop the exit briefing presentation with the input of all team members. This work facilitated the consensus of the audit team on the content of the exit briefing, and re-affirmed the findings and any concerns the audit team would like to convey to PNSC. The audit was originally scheduled for completion on September 20, 2007.

Exit Briefing

The exit briefing was presented by the audit team leader to the assembled audit team and PNSC staff on September 21, 2007. The audit team leader shared the audit team's preliminary results verbally and via a preliminary findings presentation. The audit sub-team engaged discussion where applicable to help PNSC understand the methodology and reasoning for any possible violations found. The preliminary findings presentation included the audit team's findings concerning PNSC's self-reported violations and the status of the mitigation plans.

The exit briefing was also a forum for the audit team to offer informal recommendations for process improvement. These recommendations are not included in this audit report but were documented in the exit briefing presentation. The evidence was turned over to the WECC's regional compliance staff for confidential storage of the evidence.

Company Profile

PNSC is an independent non-profit corporation with its own governing board, under contract with the WECC to provide reliability coordinating services for entities within the PNSC footprint. WECC maintains oversight of all PNSC's activities. PNSC is not part of an organization that provides transmission services or engages in the purchase or sale of electric energy.

PNSC's footprint includes sixteen balancing and transmission operator entities in an area comprising all or parts of the states of Washington, Oregon, Idaho, Montana, Utah, Wyoming and Nevada; and the Canadian provinces of British Columbia and Alberta. There are three reliability coordinating centers in the WECC region, PNSC, California Mexico Reliability Center (CMRC) and Rocky Mountain Desert Southwest Reliability Center (RDRC). PNSC and the other two WECC Reliability Coordinators operate under a single, interconnection-wide reliability plan and a body of joint interconnection-wide policies and procedures, including an RC operating agreement. The WECC Reliability Coordination Subcommittee (RCS) provides a forum for the resolution of policy and procedural issues and the Reliability Tools Work Group (RTWG) provides a forum for the evaluation, implementation, and coordination of equipment and associated processes.

Sixty percent of the generation resources in PNSC's area of responsibility are hydroelectric. The remaining generation is produced from nuclear, conventional thermal plants and miscellaneous resources, such as non-utility owned gas-fired cogeneration. The average firm load capacity of hydroelectric generation is calculated to be 11,000 MW with an additional 3,000 MW non-firm energy available during "average" water year conditions. Total generation capacity for the PNSC footprint is projected to be 82,000 MW excluding maintenance. The coincidental peak load in the PNSC Reliability Area was 59,971 MW at 1755 on November 28, 2006.

Voltage levels of the bulk electric system in PNSC's area of responsibility are from 1,000 kV DC to 100 kV AC. The system comprises approximately 264 circuit miles of 500/1000 kV DC; 40 miles of 260 to 280 kV DC; 9,740 miles of 500 kV AC; 4,358 miles of 345-450 kV; 444 miles of 287-340 kV; 20,844 miles of 230 kV; and 27,396 miles of 115-161 kV. PNSC maintains reliability coordinating oversight along with CMRC and RDRC for WECC paths 24, 30, 34, 35, 66, 67 and 80.

Audit Specifics

The compliance audit was conducted on September 19-21, 2007 at the PNSC office in Vancouver, Washington.

Table 1: NERC Led Audit Team

Audit Team Role	Name	Title	Company
Lead	Jacqueline Power	Regional Compliance Program Coordinator	NERC
Team Member	Lisa Milanes	Manager of Compliance Administration	WECC
Team Member	Richard Mabry	Senior Compliance Engineer	WECC
Team Member	Ed Riley	Senior Compliance Engineer	WECC
Team Member	Mike Hunter	Consultant, WECC Staff	WECC
Team Member	Ed Ruck	Regional Compliance Program Coordinator	NERC
Team Member	Earl Shockley	Regional Compliance Program Coordinator	NERC

Table 2: PNSC Audit Participants

Name	Title	Organization
Linda Perez	Director, Reliability Coordination	WECC
Jack Bernhardsen	Manager of PNSC	PNSC
Dick Schwarz	Lead Reliability Coordinator	PNSC
Mike Fenimore	Shift Reliability Coordinator	PNSC
Bernie O'Connell	Shift Reliability Coordinator	PNSC
Pete Gibson	Study Coordinator	PNSC
Greg Campbell	Study Coordinator	PNSC

Audit Results

Findings

Table 3: PNSC Self Reported Violations and Mitigation Plan Status

Reliability Standard	Finding
EOP-006-1	R1-Possible Violation
EOP-008-0	R1.2-Complete R1.6-In progress
IRO-001-1	R7-Possible Violation
IRO-002-1	R7-In progress
IRO-005-2	Complete
IRO-014-1	Complete

Table 4: PNSC Compliance Audit Reliability Standards

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Reliability Standard	Requirement	Finding
CIP-001-1	R1.	Compliant
CIP-001-1	R2.	Compliant
CIP-001-1	R3.	Compliant
CIP-001-1	R4.	Possible Violation
COM-001-1	R2.	Compliant
COM-001-1	R5.	Compliant
COM-002-2	R1.	NA
COM-002-2	R2.	Compliant
EOP-002-2	R1.	Compliant
EOP-002-2	R2.	NA
EOP-002-2	R3.	NA
EOP-002-2	R4.	NA
EOP-002-2	R5.	NA
EOP-002-2	R6.	NA
EOP-002-2	R7.	NA
EOP-002-2	R8.	Compliant
EOP-002-2	R9.	NA
EOP-006-1	R1.	Possible Violation
EOP-006-1	R2.	Compliant
EOP-006-1	R3.	Possible Violation
EOP-006-1	R4.	Compliant
EOP-006-1	R5.	Compliant
EOP-006-1	R6.	Possible Violation
EOP-008-0	R1.	Possible Violation
INT-004-1	R1.	NA
INT-004-1	R2.	NA
IRO-001-1	R1.	NA
IRO-001-1	R2.	Compliant
IRO-001-1	R3.	Compliant
IRO-001-1	R4.	Possible Violation
IRO-001-1	R5.	NA
IRO-001-1	R6.	NA
IRO-001-1	R7.	Possible Violation
IRO-001-1	R8.	NA
IRO-001-1	R9.	Compliant
IRO-002-1	R1.	Compliant

IRO-002-1	R2.	Compliant
IRO-002-1	R3.	Compliant
IRO-002-1	R4.	Compliant
IRO-002-1	R5.	Compliant
IRO-002-1	R6.	Compliant
IRO-002-1	R7.	Self-Reported Violation
IRO-002-1	R8.	Compliant
IRO-002-1	R9.	Compliant
IRO-003-2	R1.	Compliant
IRO-003-2	R2.	Compliant
IRO-004-1	R1.	Possible Violation
IRO-004-1	R2.	Compliant
IRO-004-1	R3.	Compliant
IRO-004-1	R4.	NA
IRO-004-1	R5.	Compliant
IRO-004-1	R6.	Possible Violation
IRO-004-1	R7.	NA
IRO-005-1	R1.	Compliant
IRO-005-1	R2.	Compliant
IRO-005-1	R3.	Compliant
IRO-005-1	R4.	Compliant
IRO-005-1	R5.	Compliant
IRO-005-1	R6.	Compliant
IRO-005-1	R7.	Compliant
IRO-005-1	R8.	Compliant
IRO-005-1	R9.	Compliant
IRO-005-1	R10.	Compliant
IRO-005-1	R11.	Compliant
IRO-005-1	R12.	Compliant
IRO-005-1	R13.	Compliant
IRO-005-1	R14.	Compliant
IRO-005-1	R15.	Compliant
IRO-005-1	R16.	Compliant
IRO-005-1	R17.	Compliant
IRO-006-3	R1.	Compliant
IRO-006-3	R2.	Compliant
IRO-006-3	R3.	Compliant

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IRO-006-3	R4.	Compliant
IRO-006-3	R5.	Compliant
IRO-006-3	R6.	Compliant
IRO-014-1	R1.	Compliant
IRO-014-1	R2.	Compliant
IRO-014-1	R3.	Compliant
IRO-014-1	R4.	Possible Violation
IRO-015-1	R1.	Compliant
IRO-015-1	R2.	Compliant
IRO-015-1	R3.	Compliant
IRO-016-1	R1.	Compliant
IRO-016-1	R2.	Compliant
PER-003-0	R1.	Compliant
PER-004-1	R1.	Compliant
PER-004-1	R2.	Compliant
PER-004-1	R3.	Compliant
PER-004-1	R4.	Compliant
PER-004-1	R5.	Compliant
TOP-003-0	R1.	NA
TOP-003-0	R2.	NA
TOP-003-0	R3.	NA
TOP-003-0	R4.	Possible Violation
TOP-005-1	R1.	Compliant
TOP-005-1	R2.	Compliant
TOP-005-1	R3.	NA
TOP-005-1	R4.	NA
TOP-007-0	R1.	NA
TOP-007-0	R2.	NA
TOP-007-0	R3.	NA
TOP-007-0	R4.	Compliant

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Attachment b

Settlement Agreement(s)

NERC
NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

June 18, 2010

Mr. Matthew Yates
Attorney
Western Electricity Coordinating Council - Reliability Coordinator
615 Arapeen Drive
Suite 210
Salt Lake City, UT 84108

Re: Notice of Proposed Expedited Disposition of Pending Violations or Alleged Violations

Dear Matt:

This letter is giving notice that NERC proposes expedited disposition of the pending violations or alleged violations listed in **Attachment B**. **Please review the information below and respond in writing no later than 10 days from the date of this notice.** Responses should be directed to Tim Kucey, Manager of NOP Development, at tim.kucey@nerc.net. If you have questions, please call Tim at 609-524-7027.

NERC intends to file with the Federal Energy Regulatory Commission ("FERC" or "Commission") a request to expedite resolution of the pending violations or alleged violations listed in **Attachment B** and to accept disposition of these violations or alleged violations under the terms of the Agreement in **Attachment A** hereto, based on the following factors:

- The violations do not pose a serious or substantial risk to system reliability;
- The three RC operations centers at which the violations were incurred ceased operations and became defunct subsequent to WECC RC's opening of its two new RC operations controls centers in January 2009;
- The violations occurred, and were reported to or identified by NERC prior to July 3, 2008; and
- The violations were timely and successfully mitigated by WECC RC by virtue and in the course of WECC RC's two new operations centers becoming operational and assuming all WECC RC functions and accountabilities previously performed by the three now-defunct operations centers at which the instant violations were incurred.

This proposed expedited disposition will result in the assessment of a zero-dollar ($0) penalty identified for each of the respective violations listed in **Attachment B** if this disposition is accepted by WECC RC and approved by the NERC Board of Trustees Compliance Committee (BOTCC) and FERC.

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If WECC RC accepts this proposed expedited disposition, please sign the attached Agreement and return it to NERC within **10 days** of the date of this Notice. ***If WECC RC does not wish to accept this proposed expedited disposition, please sign the attached OPT OUT Attachment A and return it to NERC within 10 days of the date of this Notice.***

Sincerely,

T.J. (Tim) Kucey
Manager of NOP Development
NERC Compliance

Attachments:
A – Agreement/Decision to Opt Out
B – List of Violations and Associated Penalties

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ATTACHMENT A

AGREEMENT

NERC and WECC-RC agree to the following:

1. Acceptance of this Agreement results in the assessment of a 0$ (zero dollars) penalty for the violations listed in **Attachment B,** subject to approval by the NERC Board of Trustees Compliance Committee (BOTCC) and the Federal Energy Regulatory Commission ("FERC" or "Commission").

2. The violations listed in **Attachment B** will be considered Confirmed Violations for all purposes and may be used as aggravating factors in accordance with the NERC Sanction Guidelines for determining appropriate monetary penalties or sanctions for future violations.

3. WECC RC attests there have been no other confirmed violations of the reliability standards listed in **Attachment B** as of the date of this attestation.

4. The expedited disposition agreed to herein represents a full and final disposition of the violations listed in **Attachment B**, subject to approval by the BOTCC and FERC.

Accepted:

WECC RC

Mark W Maher 6/18/2010

By Date

NERC

June 18, 2010

By Date

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OPT OUT ATTACHMENT A

Decision to Opt Out

WECC RC declines to participate in the expedited resolution of the identified violations or alleged violations.

WECC RC

_____ _____

By Date

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ATTACHMENT B

List of Violations

NERC Violation ID	REGISTERED ENTITY	Standard	Requirement	Penalty
WECC200700499 / NCEA200700064	WECC RC	CIP-001-1	4	0$
WECC200700500 / NCEA200700066	WECC RC	COM-001-1	3	0$
WECC200700501 / NCEA200700067	WECC RC	IRO-001-1	4	0$
WECC200700503 / NCEA200700069	WECC RC	IRO-001-1	7	0$
WECC200700502 / NCEA200700068	WECC RC	IRO-001-1	5	0$
WECC200710001 / NCEA200700070	WECC RC	IRO-005-1	2	0$
WECC200700400 / NCEA200700058	WECC RC	CIP-001-1	4	0$
WECC200700401 / NCEA200700059	WECC RC	EOP-006-1	3	0$
WECC200700402 / NCEA200700060	WECC RC	EOP-006-1	6	0$
WECC200810296 / NCEA200800071	WECC RC	EOP-006-1	1	0$
WECC200700397/ NCEA200700056	WECC RC	IRO-004-1	1	0$
WECC200700399 / NCEA200700057	WECC RC	TOP-003-0	4	0$
WECC200700451 / NCEA200700065	WECC RC	EOP-006-1	1	0$
WECC200700446 / NCEA200700061	WECC RC	PER-004-1	1	0$
WECC200700447 / NCEA200700062	WECC RC	PER-004-1	3	0$
WECC200700448 / NCEA200700063	WECC RC	PER-004-1	4	0$
WECC200810328 / NCEA200800072	WECC RC	EOP-008-0	1	0$

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Attachment c

Mitigation Plan

WECC COMPLIANCE ENFORCEMENT PROGAM

MITIGATION PLAN

Please complete an individual Mitigation Plan for each NERC Reliability Standard that indicates any level(s) of non-compliance.

Registered Entity Name: PNSC

Date noncompliance was discovered or reported: May 18, 2007

Date Mitigation Plan submitted: May 20, 2007

Standard Title: EOP

Standard Number: 006-1

Requirement / Measure Number:

R1. Each Reliability Coordinator shall be aware of the restoration plan of each Transmission Operator in its Reliability Coordinator Area in accordance with NERC and regional requirements.

Level of Noncompliance: ☐ Level 1 ☐ Level 2 ☐ Level 3 ☒ Level 4

☐ Level not specified

Provide an explanation of the noncompliance:

PNSC has 17 of the transmission operators restoration plans and has requested current updated copies of the restoration plans for all transmission operators within their footprint on May 18, 2007. Not all of the most current plans have been provided or it has not been verified that the copy of the restoration plan that the PNSC has is the most current.

Designate a reliability impact (minimal, moderate, or severe) that the noncompliance had or could have had on the interconnection. Include an explanation for the designation.

Minimal. The PNSC RC's are well trained, veteran employees who receive annual training in system restoration and do have copies of the transmission operator restoration plans within their footprint, although they may not be the most current. The PNSC is in the process of acquiring and verifying that they have the most current copies and has the majority (17) of the transmission operators restoration plans.

Describe any mitigating factors for this non-compliance (include supporting documentation).

PNSC is working with the transmission operators within their footprint to acquire or verify the restoration plans they currently have are the most up to date and accurate.

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Describe your detailed plan to become compliant.
Continue to work with the transmission operators to acquire or verify the restoration plans are the most current and up to date.

Describe your detailed schedule to become compliant. (The Schedule should include regular status updates to WECC).

May 18, 2007 – CMRC manager issue letter to transmission operators to acquire or verify the restoration plan the CMRC has is the most current for that entity.
May 18-August 31, 2007 – work with entities to acquire or verify the restoration plans are the most current.
August 31, 2007 – CMRC has the most up to date and current copies of the transmission operators restoration plans.

Are additional documents or information attached: ☐ Yes ☒ No

Additional Notes or Comments:

Point of contact for WECC follow-up:

Name:	Linda Perez
Title:	Director Reliability Coordinators
Phone:	801-883-6873
Email:	lperez@wecc.biz

For WECC Use Only:

WECC ID Number:

NERC ID Number:

Date Mitigation Plan was received at WECC:

Date Mitigation Plan was accepted by WECC:

Date notice of completion of Mitigation Plan was received by WECC:

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Mitigation Plan Submittal Form

New ☒ or Revised ☐

Date this Mitigation Plan is being submitted: 5-1-08

If this Mitigation Plan has already been completed:

- Check this box ☐ and
- Provide the Date of Completion of the Mitigation Plan:

Section A: Compliance Notices & Mitigation Plan Requirements

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "Appendix A - Compliance Notices & Mitigation Plan Requirements" to this form. **Review the notices and check this box ☒ to indicate that you have reviewed and understand the information provided therein**. This Submittal Form and the Mitigation Plan submitted herein are incomplete and cannot be accepted unless the box is checked.

Section B: Registered Entity Information

B.1 Identify your organization:

Company Name: WECC PNSC
Company Address: 615 Arapeen Suite 210 Salt Lake City Utah
NERC Compliance Registry ID ***[if known]***:

B.2 Identify the individual in your organization who will be the Entity Contact to WECC regarding this Mitigation Plan.

Name: Linda Perez
Title: WECC RC Director
Email: lperez@wecc.biz
Phone: 801 883 6873

Section C: Identity of Reliability Standard Violations Associated with this Mitigation Plan

This Mitigation Plan is associated with the following violation(s) of the reliability standard listed below:

C.1 Standard: EOP 006-1
[Identify by Standard Acronym (e.g. FAC-001-1)]

C.2 Requirement(s) violated and violation dates:
[Enter information in the following Table]

NERC Violation ID # [if known]	WECC Violation ID # [if known]	Requirement Violated (e.g. R3.2)	Violation Date(*) (MM/DD/YY)
		R1	9-21-07
		R3	9-21-07
		R6	9-21-7

(*) Note: The Violation Date shall be: (i) the violation occurred; (ii) the date that the violation was self-reported; or (iii) the date that the violation has been deemed to have occurred on by WECC. Questions regarding the date to use should be directed to the WECC.

C.3 Identify the cause of the violation(s) identified above:

R1 - PNSC has the restoration plans for AVA, SCL, PGE, or WAPA in the NWPP restoration manual.

R3 - PNSC has been using the NWPP restoration manual as the RC restoration plan.

R6 - PNSC did not have a planned method for determining that an operating emergency has been mitigated .

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

C.4 ***[Optional]*** Provide any relevant additional information regarding the violations associated with this Mitigation Plan:

The NWPP restoration plan is a long standing document that the PNSC RC has direct input into on an annual basis.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

Section D: Details of Proposed Mitigation Plan

Mitigation Plan Contents

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the violations identified above in Part C.2 of this form:

R! - PNSC will re-contact AVA, SCL, PGE, or WAPA and request they verify their most current restoration plan. If they have a more current restoration plan then PNSC will request the more current copy

R3 - The WECC has formed a RC restoration team that will develop a comprehensive WECC Interconnection wide system restoration plan for the RC's.

R6 - The WECC RC restoration team will incorporate a planned method for determining that an operating emergency has been mitigated in the WECC Interconnection wide restoration plan .

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

Check this box ☐ and proceed to Section E of this form if this Mitigation Plan, as set forth in Part D.1, has already been completed; otherwise respond to Part D.2, D.3 and, optionally, Part D.4, below.

Mitigation Plan Timeline and Milestones

D.2 Provide the timetable for completion of the Mitigation Plan, including the completion date by which the Mitigation Plan will be fully implemented and the violations associated with this Mitigation Plan are corrected:

D.3 Enter Milestone Activities, with completion dates, that your organization is proposing for this Mitigation Plan:

Milestone Activity	Proposed Completion Date* (shall not be more than 3 months apart)
R1 - Recontact AVA, SCL, PGE, & WAPA for most current copy of their restoration plans	June 1, 2008
R3 - WECC restoration team formed	April 1, 2008
R3 & R6 - WECC Interconnection wide restoration plan completed and includes a planned method for determining that an operating emergency has been mitigated	November 1, 2008
R3 - WECC Interconnection wide restoration plan reviewecd by all WECC RC's	December 31, 2008 \

(*) Note: Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.

[Note: Provide your response here; additional detailed information may be provided as an attachment as necessary]

Additional Relevant Information (Optional)

D.4 If you have any relevant additional information that you wish to include regarding the mitigation plan, milestones, milestones dates and completion date proposed above you may include it here:

The restoration team that will be devleoping the WECC Interconnection RC restoration plan is John Greelaw, Dick Schwarz, Jack Bernhardsen and Paul Bleuss.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

Section E: Interim and Future Reliability Risk

Check this box ☐ and proceed and respond to Part E.2 and E.3, below, if this Mitigation Plan, as set forth in Part D.1, has already been completed.

Abatement of Interim BPS Reliability Risk

E.1 While your organization is implementing the Mitigation Plan proposed in Part D of this form, the reliability of the Bulk Power System may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take or is proposing as part of the Mitigation Plan to mitigate any increased risk to the reliability of the bulk power system while the Mitigation Plan is being implemented:

PNSC currently uses the NWPP restoration plan which is a comprehensive restoration document including all BA's, TOP's and the PNSC input into restoring the pacific northwest during a restoration event.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

Prevention of Future BPS Reliability Risk

E.2 Describe how successful completion of the Mitigation Plan as laid out in Part D of this form will prevent or minimize the probability that your organization incurs further violations of the same or similar reliability standards requirements in the future:

We will have comprehensive document that knits together the restoration plans for the entire WECC interconnection.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

E.3 Your organization may be taking or planning other action, beyond that listed in the Mitigation Plan, as proposed in Part D.1, to prevent or minimize the probability of incurring further violations of the same or similar standards requirements listed in Part C.2, or of other reliability

standards. If so, identify and describe any such action, including milestones and completion dates:

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

a) Submits the Mitigation Plan, as laid out in Section D of this form, to WECC for acceptance by WECC and approval by NERC, and

b) If applicable, certifies that the Mitigation Plan, as laid out in Section D of this form, was completed (i) as laid out in Section D of this form and (ii) on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and

c) Acknowledges:

1. I am [WECC RC director] of [WECC PNSC RC].

2. I am qualified to sign this Mitigation Plan on behalf of WECC].

3. I have read and understand [WECC PNSC RC] obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation" (NERC CMEP)).

4. I have read and am familiar with the contents of the foregoing Mitigation Plan.

5. [WECC PNSC RC] agrees to be bound by, and comply with, the Mitigation Plan, including the timetable completion date, as approved by WECC and approved by NERC.

Authorized Entity Officer Signature: _____

(Electronic signatures are acceptable; *see* CMEP)

Name (Print):Linda Perez
Title: WECC RC Director
Date: 5-1-08

Section G: Comments and Additional Information

You may use this area to provide comments or any additional relevant information not previously addressed in this form.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

Please direct any questions regarding completion of this form to:

Jim Stuart, Sr. Compliance Engineer
Email: Jstuart@wecc.biz
Phone: (801) 883-6887

Western Electricity Coordinating Council

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Attachment A – Compliance Notices & Mitigation Plan Requirements

I. Section 6.2 of the CMEP1 sets forth the information that must be included in a Mitigation Plan. The Mitigation Plan must include:

(1) The Registered Entity's point of contact for the Mitigation Plan, who shall be a person (i) responsible for filing the Mitigation Plan, (ii) technically knowledgeable regarding the Mitigation Plan, and (iii) authorized and competent to respond to questions regarding the status of the Mitigation Plan. This person may be the Registered Entity's point of contact described in Section 2.0.

(2) The Alleged or Confirmed Violation(s) of Reliability Standard(s) the Mitigation Plan will correct.

(3) The cause of the Alleged or Confirmed Violation(s).

(4) The Registered Entity's action plan to correct the Alleged or Confirmed Violation(s).

(5) The Registered Entity's action plan to prevent recurrence of the Alleged or Confirmed violation(s).

(6) The anticipated impact of the Mitigation Plan on the bulk power system reliability and an action plan to mitigate any increased risk to the reliability of the bulk power-system while the Mitigation Plan is being implemented.

(7) A timetable for completion of the Mitigation Plan including the completion date by which the Mitigation Plan will be fully implemented and the Alleged or Confirmed Violation(s) corrected.

(8) Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.

(9) Any other information deemed necessary or appropriate.

(10) The Mitigation Plan shall be signed by an officer, employee, attorney or other authorized representative of the Registered Entity, which if applicable, shall be the person that signed the Self-Certification or Self Reporting submittals.

II. This submittal form may be used to provide a required Mitigation Plan for review and approval by WECC and NERC.

[1] "*Uniform Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation*;" a copy of the current version approved by the Federal Energy Regulatory Commission is posted on NERC's website.

III. The Mitigation Plan shall be submitted to the WECC and NERC as confidential information in accordance with Section 1500 of the NERC Rules of Procedure.

IV. This Mitigation Plan form may be used to address one or more related violations of one Reliability Standard. A separate mitigation plan is required to address violations with respect to each additional Reliability Standard, as applicable.

V. If the Mitigation Plan is approved by WECC and NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission in accordance with applicable Commission rules, regulations and orders.

VI. WECC or NERC may reject Mitigation Plans that they determine to be incomplete or inadequate.

VII. Remedial action directives also may be issued as necessary to ensure reliability of the bulk power system.

Western Electricity Coordinating Council

Mitigation Plan Review Worksheet

Reviewed By (Name):	Ed Riley
Reviewed Date	September 2, 2008
Accepted or Rejected:	Accepted
Technical or Documentation Basis:	
Registered Entity (Name):	Pacific Northwest Security Coordinator
Registered Functions:	RC
Date Mitigation Plan Submitted:	May 1, 2008
Standard Title:	Reliability Coordination – System Restoration
Standard Number:	R3 and R6 (R1 CMP approved today 9-2-08)
Requirement Number(s)[1]:	
Level of Noncompliance:	☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☒ Level not specified

1. Is the standard and/or requirement applicable to the Registered Entity?

YES/NO:	Yes
Notes:	

2. Was the standard in effect on the day of the violation?

YES/NO:	Yes
Notes:	

3. Was the Appendix A confirmation box checked in Section A.1?

YES/NO:	Yes
Notes:	

4. Does the plan identify the correct Alleged or Confirmed Violation(s) of the Reliability Standard?

YES/NO:	Yes
Notes:	

[1] Violations are reported at the level of requirements, sub requirements are not necessary

5. **Does the plan adequately describe the cause of the violation(s)?**

YES/NO:	Yes
Notes:	

6. **Does the plan adequately identify the Registered Entity's planned action(s) to correct the violation(s)?**

YES/NO:	Yes
Notes:	

7. **Does the plan adequately identify planned action(s) to prevent recurrence of the violation(s) that is being mitigated?**

YES/NO:	Yes
Notes:	

8. **Does the plan adequately identify the anticipated impact of the violation(s) on the bulk power system reliability and an action plan to mitigate any increased risk to the reliability of the bulk power-system while the plan is being implemented?**

YES/NO:	Yes
Notes:	

9. **Does the plan identify a timetable for completion including the completion date by which the plan will be fully implemented and the violation(s) corrected?**

YES/NO:	Yes
Notes:	

10. **Is the time to complete the plan reasonable?**

YES/NO:	Yes
Notes:	

11. **Does the plan include implementation milestones no more than three (3) months apart if the expected completion date is more than three (3) months from the date of submission?**

YES/NO:	Yes
Notes:	

12. **Any additional comments regarding the Mitigation Plan:**

Notes:	No

Attachment d

Registered Entity's Certification of Completion

Western Electricity Coordinating Council

Mitigation Plan Completion Form

Please complete a Mitigation Plan Completion form for each fully mitigated violation and return to Compliance@WECC.biz along with the supporting evidence that confirms full compliance and Authorized Officer's signature.

Registered Entity Name: WECC PNSC (Pacific Northwest Security Coordinator)

Standard Title: Reliability Coordination System Restoration

Standard Number: EOP 006-1

Requirement Number(s): **R3 & R6**

Actual completion date of Mitigation Plan: 10-30-08

Check this box ☒ to indicate that you understand that the submittal of this Completion form is incomplete and cannot be reviewed for approval unless supporting documentation/evidence that confirms full compliance is attached.

Please provide the specific location (i.e. paragraph numbers, page numbers) in the documentation / evidence submitted to verify compliance.

It is in the documents attached. The Overview of the WECC RC restoration plan philosophy, the WECC EOP 006 procedure, the NWPP restoration plan, the CISO restoraton plan, the Rocky Mountain restoration plan and the Desert Southwest restoration plan.

Additional Notes or Comments pertaining to this violation:

By endorsement of this document I attest that WECC PNSC is now in full compliance with the standard / requirements addressed in this Mitigation Plan and documentation / evidence supporting full compliance is attached for review and audit by the WECC Compliance Staff.

Authorized Officer's Signature: Linda Perez

Authorized Officer's Name: Linda Perez

Authorized Officer's Title: WECC Managing Director of Reliability Coordination

Date: 10-31-08

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Vancouver Office
One Park Place
7600 NE 41st Street, Ste 201
Vancouver, WA 98662

Western Electricity Coordinating Council

Reliability Coordination Centers

Loveland Office
Hahns Peak One
4850 Hahns Peak Drive, Ste 120
Loveland, CO 80538

To: Jim Hughes, NERC

January 8, 2010

I certify that the previous 3 reliability coordination centers, the Pacific Northwest Security Coordinator, the Rocky Mountain Desert Southwest Reliability Coordinator and the California Mexico Reliability Coordinator were dissolved on December 31, 2008 and the WECC Reliability Coordinator took over the RC function for the Western Interconnection on January 1, 2009 with 2 new reliability centers located in Loveland, Colorado and Vancouver, Washington. The WECC Reliability Coordinator installed a new EMS system, new communications systems, increased staffing and developed new procedures and processes to facilitate future compliance with the NERC mandatory standards.

Linda Perez
WECC Managing Director of Reliability Coordination

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Attachment e

Regional Entity's Verification of Completion

NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

NERC Reliability Coordinator Certification of Western Electric Coordinating Council

Site Visits Conducted

October 8–10, 2008 and December 15–18, 2008 Loveland, CO

October 13–17, 2008 Vancouver, WA

Western Electric Coordinating Council

to ensure the reliability of the bulk power system

116-390 Village Blvd., Princeton, NJ 08540
609.452.8060 | 609.452.9550 fax
www.nerc.com

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Introduction

This report presents the results of the NERC Reliability Coordinator (RC) Certification of Western Electric Coordinating Council's (WECC) consolidation of three footprints into one. This consolidation includes, but is not limited to, the following:

- A complete change in facility area control
- New Energy Management Systems (EMS)
- New communication systems (voice and data)
- ~40% change in operation's staff
- A complete change in facility configuration (primary, backup, & consolidation)
- Revision of operating procedures

The present RC operation footprint of the western interconnect (WECC region) is operated from three primary control facilities: WECC Pacific Northwest Security Coordinator (PNSC); WECC California Mexico Reliability Coordinator (CMRC); WECC Rocky Mountain — Desert Southwest Reliability Coordinator (RDRC). It is WECC's intention to consolidate these three control areas into one for the entire western interconnect and operate from two new control centers; one located in Loveland, Colorado and the other in Vancouver, Washington.

RCs have a primary responsibility for the real-time operating reliability of its RC area in coordination with its neighboring RC's wide area view; operate with good operating practices and compliance with the NERC Standards without regard to economic consideration and burdening neighboring systems.

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Certification Team

Through discussions with the NERC staff, NERC Operating Committee, and WECC, it was determined that due to the magnitude of changes the WECC consolidation project entails, a NERC RC certification was warranted. This decision began the process for certification that is outlined in the NERC Rules of Procedure (RoP) Section 500 and RoP Appendix 5. Following the decision to NERC certify WECC as an RC, a Certification Team was formed. The team rosters for members of both the RC Certification Team and key WECC RC staff involved with this certification are listed on Attachment 1.

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Objective and Scope

The objective of this review was to assess WECC's implementation of their processes, procedures, training, and tools which will allow them to reliably perform the function of an RC at their new facilities. The scope of the review included, but was not limited to: (1) Interviewing WECC's management and reviewing pertinent documentation for verification of basic requirements for RC operation; (2) Reviewing procedures, and other documentation developed by WECC to meet the applicable NERC and Regional Entity standards / requirements; (3) Interviewing WECC system operations personnel; (4) Reviewing WECC's physical control centers in Loveland, CO and Vancouver, WA, which included the Energy Management System (EMS), communication facilities, operator displays, facility power, security systems, etc.; (5) Interviewing WECC EMS and Planning staff; and (6) Performing other validation reviews as considered necessary.

Five site visits were conducted; three were conducted at WECC's new control center located in Loveland, Colorado on October 8-10, 2008, November 17, 2008, and December 15-18, 2008. Additionally, two others were conducted at WECC's control center in Vancouver, Washington on October 13–17, 2008 and, November 17, 2008.

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Overall Conclusion

The certification process was completed in reasonable accordance with the NERC Rules of Procedure 500 and Appendix 5 to determine if the applicant has the necessary tools, processes, and procedures to perform the function as a NERC-certified RC. The applicant presented the necessary evidence to the Certification Team for its review, as it relates to the applicable standards/requirements and good industry practices for sustained reliable RC operation of the western interconnect. Because of this review, the Certification Team has reasonable assurance the WECC RC does have the tools, processes, and procedures in place to reliably perform the RC function. Therefore, the RC Certification Team recommends that WECC be granted approval as a NERC-certified RC on a conditional basis.

WECC RC has requested to begin operation in their new facilities on or about January 1, 2009.

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Certification Team Findings

While the team recommends that WECC be granted certification, the following work-in-process items must be completed prior to WECC going operational as a NERC Certified Reliability Coordinator (Attachment 6 provides the details regarding the below findings) as a condition of certification. WECC will need to certify in writing that these work-in-progress items have been completed prior to January 1, 2009 and present adequate evidence of completion to the Certification Team prior to WECC commencing RC operation in their new facilities as a condition of certification. The work-in-progress items are:

- WECC needs to develop and document compensatory measures to mitigate those unused ports and services that cannot be disabled. CIP 007-1 R2.3
- WECC needs to develop a shift schedule that evenly distributes the expertise from CMRC, RDRC, and PNSC
- EMS alarm limit changes made either manual or permanent need to be tracked to ensure situational awareness
- Awareness of generation capability for (maximum / minimum) in EMS
- Shift change process needs to incorporate entire log review and include both RC offices
- Status of all RAS that may have an inter-Balancing Authority, or inter-Transmission Operator impact needs to be monitored and tracked
- Static and dynamic reactive reserves for all BPS areas vulnerable to voltage collapse should be calculated and displayed for operators
- Contingencies in RTCA are coded and do not provide the operator a means to identify what equipment is being included
- SCIT calculated nomogram limit and actual flows are not available to the RC
- SCIT nomograms are not available to the RC
- WECC-RC does not alert the operator for adequacy of BA real power reserves
- WECC needs to streamline the voluminous Contingency Analysis results
- WECC needs to identify and document all system synchronization points
- All BPS (at least "all" 200 kV and above) station diagrams "auto-draw" need to be verified/re-drawn for WECC-RC

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Positive Observations

Throughout the certification process the Certification Team identified a number of positive observations:

- The Certification Team noted a strong alignment of the WECC staff at all levels of the organization. The Certification Team feels that this is a major contributor to WECC's success regarding the aggressive schedule.
- The Certification Team noted that WECC's highly skilled / experienced RC operations staff is involved in the design and development of EMS.
- The Certification Team noted that the EMS and IT engineering staff is very knowledgeable and is closely aligned with the operations staff.
- WECC has provided the RC operators "State of the Art" tools such as the Firescope. This information is easy to navigate and manage and provides the operator real-time information regarding the WECC facilities in a dashboard format.

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Certification Team Focus Areas

To enable the Certification Team to complete a thorough review of the WECC RC processes, procedures, and tools and to leverage the expertise of the Certification Team, three focus areas were identified and Certification Team resources assigned — Facilities, RC Preparedness, and EMS. Each focus area and the details of the Certification Team review with the resulting conclusions drawn are identified below.

Facilities

The Certification Team completed the following activities: drawing and contract review, site facility tour inspection, Site Acceptance Test (SAT) results, and interviews with WECC staff at the Loveland and Vancouver facilities. The drawing and contract review consisted of the communications infrastructure diagrams, cyber boundary diagrams, electrical single line diagrams, and physical drawings of each facility. The site tours included the data centers, control rooms, office areas, and diesel generator facilities. The SAT results and subsequent closure of identified open items were also reviewed. Additionally, during the site tours the Certification Team witnessed diesel testing for site blackout capabilities. Interviews were conducted with WECC staff ranging from the receptionist through engineering and operations and management. As a result of the aforementioned activities, the Certification Team has reasonable assurance that both facilities are adequate and meet the requirements established in the NERC Reliability Standards. Specific details that support this conclusion are provided in Attachment 3.

RC Preparedness

The Certification Team interviewed a number of the WECC RC operators that will be responsible for performing the tasks of an RC in the new WECC Vancouver and Loveland RC control rooms. The Certification Team interviewed operators from each center on the day to day and emergency tasks an RC could potentially face. It was noted that many of the RC operators have previous experience as a NERC-certified operator and as existing RC's at the three WECC RC centers. All positions in the WECC RC control room requiring NERC-certified operators are staffed with NERC-certified operators. These interviews were conducted with the WECC RC at their work stations in order to provide the Certification Team several demonstrations of their EMS capabilities and advanced applications to further depict their operator readiness; these demonstrations are summarized in Attachment 4 of this report. This also gave the WECC RC the opportunity to demonstrate to the team that they were familiar with the location and use of the operators' policies, procedures, and other appropriate tools they will use to reliably operate as the WECC RC.

EMS

The Certification Team interviewed WECC RC support staff related to the data, tools and support for performing the RC function at WECC's offices in Vancouver and Loveland. The Certification Team reviewed the data transfer, server, applications, and redundancy configuration of the core tools including: EMS, OSI-PI, ICCP, COS (outage scheduling), WECC-Net (messaging), WIT (schedules), EIDE, Firescope, voice telecom, workstations, and map board display, finding a state of the art selection of the tools, redundancy both within and between

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sites, and reliable data transfer from member BA's . The Certification Team reviewed numerous procedure documents, processes, and controls related to "critical assets" and CIP, data verification — modeling-mapping, data archiving, RC troubleshooting and support call-out, next day study process, IT change control, system access, and systems configuration, finding adequate processes, procedures and control documents in place to support reliable operations of the WECC RC function. The Certification Team also reviewed via demonstration by WECC staff the data presentation supporting situational awareness by the WECC RC operators including; overview displays in both EMS and OSI-PI, detailed area and station displays in both EMS and OSI-PI, outage data on COS, and tool & system status on the Firescope, finding a plan to completely support reliable WECC RC operations but is not completed as noted in the "Certification Team Findings" section of this report. Overall the Certification Team review of IT configuration and tools, processes, procedures, and controls, and data availability and presentation will support, when complete, reliable WECC RC functionality at both Vancouver and Loveland sites. Specific details that support this conclusion are provided in Attachment 5.

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Company History

WECC was formed on April 18, 2002 by the merger of Western Systems Coordinating Council (WSCC), Southwest Regional Transmission Association (SWRTA), and Western Regional Transmission Association (WRTA). The formation of WECC was accomplished over a four-year period through the cooperative efforts of WSCC, SWRTA, WRTA, and other regional organizations in the West. WECC's interconnection-wide focus is intended to complement current efforts to form Regional Transmission Organizations (RTO) in various parts of the West.

Western Systems Coordinating Council (WSCC) was formed with the signing of the WSCC Agreement on August 14, 1967 by 40 electric power systems. Those "charter members" represented the electric power systems engaged in bulk power generation and/or transmission serving all or part of the 14 Western States and British Columbia, Canada.

WECC continues to be responsible for coordinating and promoting electric system reliability as had been done by WSCC since its formation. In addition to promoting a reliable electric power system in the Western Interconnection, WECC will support efficient competitive power markets, assure open and non-discriminatory transmission access among members, provide a forum for resolving transmission access disputes, and provide an environment for coordinating the operating and planning activities of its members as set forth in the WECC Bylaws.

The WECC region encompasses a vast area of nearly 1.8 million square miles. It is the largest and most diverse of the eight regional councils of the North American Electric Reliability Corporation (NERC). WECC's service territory extends from Canada to Mexico. It includes the provinces of Alberta and British Columbia, the northern portion of Baja California, Mexico, and all or portions of the 14 western states in between. Transmission lines span long distances connecting the verdant Pacific Northwest with its abundant hydroelectric resources to the arid Southwest with its large coal-fired and nuclear resources. WECC and the nine other regional reliability councils were formed due to national concern regarding the reliability of the interconnected bulk power systems, the ability to operate these systems without widespread failures in electric service, and the need to foster the preservation of reliability through a formal organization.

Due to the vastness and diverse characteristics of the region, WECC's members face unique challenges in coordinating the day-to-day interconnected system operation and the long-range planning needed to provide reliable and affordable electric service to more than 71 million people in WECC's service territory.

Membership in WECC is voluntary and open to any organization having an interest in the reliability of interconnected system operation or coordinated planning.

WECC members have long recognized the many benefits of interconnected system operation. During the mid 1960s, expansion of interconnecting transmission lines among systems in the western United States and western Canada resulted in the complete interconnection of the entire WECC region. As this expansion was taking place, systems generally adopted the Operating Guides of the North American Power Systems Interconnection Committee (NAPSIC) to promote

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consistent operating practices within the region. NAPSIC later became the NERC Operating Committee.

Today, over 30 years later, WECC continues to provide the forum for its members to enhance communication, coordination, and cooperation — all vital ingredients in planning and operating a reliable interconnected electric system.

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Company Details

Since 1997, WECC has had three Reliability Coordination Centers; CMRC, RDRC and PNSC. Collectively, the Reliability Coordinators have a real-time, wide-area view of the bulk power system. The Reliability Centers are hosted by major transmission operators who charge WECC for overhead and other costs associated with the centers.

In July 2006, the WECC Board approved a strategy designed to make reliability coordination in the Western Interconnection more effective and efficient. The Reliability Coordination Strategic Initiative Task Force was formed to investigate and recommend solutions to the WECC Board to meet their mandate. The key strategic principles are:

- The WECC objective is to provide Reliability Centers (RC's) that efficiently and effectively provide each of the reliability functions assigned to RC's by the standards of the ERO and WECC. WECC's Reliability Coordinators' only objective is the reliability and protection of the bulk power system
- All RC teams should be equipped with the same set of application tools and input data for monitoring and analyzing the reliability of the interconnection
- Each RC team must have the training to assume immediate functional responsibility for the other RC team
- The strategy will result in a consolidation of Reliability Centers from three to two, the development and use of a common model—the WSM—and tools, and increased independence of the Reliability Coordinators
- The RC functions should be carried out by Reliability Center teams located at two geographically separate sites, selected so as to minimize the risk of a single event causing the simultaneous loss of functionality of both sites. There should be one RC team at each site

In the December 2007 WECC board meeting, the following initiatives were approved:

- The new Reliability Centers will be operational by January 1, 2009
- The centers will be located in Vancouver, Washington and Loveland, Colorado
- The centers will be hosted, staffed and operated by WECC
- The WSM data centers will be hosted at each of the centers

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Documentation List

Copies of all of the supporting WECC documents were collected as evidence of WECC's preparedness and will be kept as a record of evidence to support the Certification Team's recommendation. These documents will be retained at the NERC office in Princeton, New Jersey for a period of six years.

None of the documents listed below are included with the distribution of this final report. Per the NERC Rules of Procedure and due to the confidential nature of this material, these documents are available for review at the NERC offices after proper authorization is obtained.

- WECC RC questionnaire
- Neighboring RC questionnaires
- Master WECC RC Matrix
- WECC's RC evidence files
- Documentation resulting from the "Certification Team Findings" items
- Miscellaneous documentation
    - Pertinent e-mails
    - Site evolution presentations
    - Schedules
    - Status matrixes

CIP Requirements

WECC provided the Certification Team documents as evidence of their compliance to the CIP Standards. These documents, however, are not available for public viewing and are retained at the NERC office in Princeton, New Jersey for a period of six years.

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Evaluation of the RC Standards

The Certification Team was able to assess the applicant's ability to reasonably meet the RC Standards/Requirements as documented in the *Master WECC RC Matrix***.**

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Attachment 1: Certification Team

The RC Certification Team

- Mark Wilson — IESO
- Terry Baker — Platte River PA
- Jim Hughes — NERC (Team Lead)
- Ali Ghassemian — FERC
- Eddy Lim – FERC
- Tony Jankowski — We Energies
- Tom Botello — S. Cal Edison
- Frank Koza — PJM
- Larry Kezele — NERC
- Mike Ryan — Portland Gen Electric
- Bob Staton — PSCo

The WECC Staff Personnel that Participated in the On-site Visits

- Linda Perez, Director RC
- Steve Goodwill, Hearing Officer
- Eric Whitley, Director EMS/IT
- Don Pape, Manager RC
- John Greenlaw, Manager RC
- Greg Campbell, Lead Coordinator
- Brett Wangen, EMS Manager
- Mike Davis, Trainer
- Karl Fittinger, RC
- Matt Cartier, RC
- Pete Gibson, RC
- Mike Cassiadora, RC
- Mike Harrison, Trainer
- Aaron Inouye, Lead IT
- Murat Uludogan, IT Technician
- Kirk Stewart, Sr. EMS Engineer
- Hongming Zhang, Sr. EMS Engineer
- Dana Martin, Receptionist
- Lisa, Helme, Receptionist

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Attachment 2: Certification Process Steps

Documentation Review

The Certification Team reviewed appropriate documentation that provided reasonable assurance that WECC has the tools, processes, procedures, and training to operate as a NERC-certified RC.

The Certification Team used a spreadsheet to catalog the documentation evidence provided by WECC, namely Master WECC RC Matrix. The spreadsheet contains all the applicable NERC Standards and associated Requirements for an entity to be evaluated as a NERC-certified RC along with WECC document references where evidence was provided by WECC that met the applicable NERC Standards and Requirements.

Applications Review

The October 8–10, 2008, October 13–17, 2008, November 17, 2008, and December 15–18, 2008 visits focused on documentation reviews, facility walk downs, interviews of certified RC operators, and evaluation of the RC applications and toolset that are available to the operator. The Certification Team reviewed WECC online applications that will be used to perform the RC function as well. The WECC RC provided application and tool set functionality demonstrations to the Certification Team as evidence of operator readiness to assume the duties of the WECC RC in the consolidated/new footprint.

Operational Testing

WECC has conducted a series of operational and point to point tests. Operational testing is primarily focused with testing the necessary signals in order to facilitate the EMS, operating process, and planned outage scheduling tools. This was tested in “parallel operation” through out the months of November and December 2008.

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Attachment 3: Facilities Review

Loveland, Colorado

Communications Systems

Telecommunications
The Loveland facility is served by redundant DS3 point-to-point circuits. In addition, internet and WECC WON connections are provided. All systems are designed such that no single point of failure exists. The telecommunication systems appear to be adequate to support the Loveland RC operation.

Telephone system
The primary telephone system for RC operations is an AVTEC Scout system. The AVTEC system connections are provided via T1 PRIs from two different carriers, one at the Vancouver location and one at the Loveland location. A satellite phone system provides backup communication capabilities. Additional backups are provided via cell phones which have push to talk capabilities and analog telephones capable of using the POTS lines at each location. The AVTEC Scout system is recorded on a Stancil voice recorder which is backed up to DVD as scheduled. Recordings are accessible to RC staff for review.

WECC.biz e-mail
Additional WECC corporate e-mail system will be installed at the Vancouver and Loveland RC locations in January. E-mail servers are currently installed at Salt Lake City and will be installed at the Vancouver and Loveland RC which will provide a robust system to the entire WECC.

Electric Power System

The Loveland facility electrical system has three sources of power. The first is utility power feeding the main Distribution Center bus. The second is a single 200kW emergency diesel generator dedicated to the Integral Distribution bus in the event of loss of facility power. Lastly, the Integral Distribution bus has two 80A feeds that are backed by two independent battery backed UPS dedicated for data center computer electronics (two redundant PDUs (PDU-A and PDU-B)). Additionally, the Internal Distribution bus has two distribution panels that power the necessary HVAC, fire detection/suppression, security, and creature comfort loads.

WECC staff demonstrated the failover capability of the back-up power system including the starting of the diesel generator. At the time of the failover test (11/9/08) the UPS was available to allow diesel start-up to supply adequate power to the essential bus, and the diesel generator had sufficient fuel capacity available. Contracts for diesel fuel allow for the tank to be replenished when the fuel level gets below 50 percent. The team reviewed diesel maintenance contracts for the Loveland site with no deficiencies noted. The electric power systems appear to be adequate to support reliable Vancouver operation.

UPS and HVAC

The UPS, HVAC, electrical supply, etc. all have redundancy to support RC functions.

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The team reviewed HVAC maintenance contracts for the Loveland site with no deficiencies noted.

Fire Protection Systems

The Loveland facility is equipped with redundant fire suppression and detection systems. The data center is protected by a dry automatically actuated system. The control room is protected by a dry pipe system which is actuated by smoke detectors in the ceiling. These systems are new and the team reviewed contracts for the maintenance of these systems with no identified deficiencies. These systems appear to be adequate for the protection of the Loveland facility.

Site Security

The Loveland facility is provided with perimeter protection through the use of electronic door locks on doors throughout the facility and closed circuit TV's are installed at key locations as well. Biometric hand scanning device is located on the entry door to the office area just beyond the receptionist's area.

Contractor Access

Janitorial services are provided by the building owner who provides background check information to WECC before access is granted. Janitorial staff is escorted at all times because CIP training had not been conducted at the time of the Certification Team review.

All other contractors needing access are considered visitors.

Visitor Access

Visitors are screened at the lobby entrance by the RC receptionist. Once in the lobby area the visitor is required to provide photo ID and sign in before getting a temporary visitor badge. The visitor must then be constantly escorted throughout the rest of the RC facility. Security training has been provided to all employees.

Vancouver Washington

Communications Systems

Telecommunications

The facility is served by redundant DS3 point-to-point circuits. In addition, internet and WECC WON connections are provided. All systems are designed such that no single point of failure exists. The telecommunication systems appear to be adequate to support the Vancouver operation.

Telephone system

The primary telephone system for RC operations is an AVTEC Scout system. The AVTEC system connections are provided via T1 PRIs from two different carriers, one at the Vancouver location and one at the Loveland location. A satellite phone system provides backup communication to the AVTEC system. Additional backups available are Verizon cell phones with push to talk capabilities and analog telephones capable of using the POTS

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lines at each location. The AVTEC Scout system is recorded on a Stancil voice recorder which is backed up to DVD as scheduled.

WECC.biz e-mail
Additional WECC corporate e-mail system will be installed at the Vancouver and Loveland RC locations in January. E-mail servers are currently installed at Salt Lake City and will be installed at the Vancouver and Loveland RC which will provide a robust system to the entire WECC.

Electric Power System

The Vancouver facility electrical system has three sources of power. The first is utility power feeding the main distribution center bus. The second is a single 200 kW emergency diesel generator utilized in the event of loss of facility power. Lastly two independent battery backed UPS are dedicated for data center computer electronics. Separate distribution panels are also diesel backed and available that powers the necessary HVAC, fire detection/suppression, security, and creature comfort loads.

WECC staff demonstrated the failover capability of the back-up power system including the starting of the diesel generator. At the time of the failover test the UPS was available to allow diesel start-up to supply adequate power to the essential bus, and the diesel generator had sufficient fuel capacity available. Contracts for diesel fuel allow for the tank to be replenished when the fuel level gets below 50 percent and alarms in the control room. The team reviewed diesel maintenance contracts for the Vancouver site and found no deficiencies.

UPS and HVAC

The UPS, HVAC, electrical supply, etc. all have redundancy to support RC functions.
The team reviewed HVAC maintenance contracts for the Vancouver site with no deficiencies noted.

Fire Protection Systems

The Vancouver facility is equipped with redundant fire suppression and detection systems. The data center is protected by a sprinkler system and FM200 system. The control room is protected by a sprinkler system. These systems are new and the team reviewed contracts for the maintenance of these systems with no identified deficiencies. These systems appear to be adequate for the protection of the Vancouver facility.

Site Security

The Vancouver facility is provided with perimeter protection through the use of electronic door locks on doors throughout the facility and closed circuit TV are installed at key locations as well. Biometric hand scanning is located on the entry door to the office area just beyond the receptionist's area.

Contractor Access:
Janitorial services are provided by the building owner who provides background check information to WECC before access is granted. CIP training of Vancouver janitorial staff had been conducted.

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All other contractors needing access are considered visitors.

Visitor Access

Visitors are screened at the lobby entrance by the RC receptionist. Once in the lobby area the visitor is required to provide photo ID and sign in before getting a temporary visitor badge. The visitor must then be constantly escorted throughout the rest of the RC facility. Security training has been provided to all employees.

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Attachment 4: RC Preparedness

RC Interview

Two separate RC interviews were conducted simultaneous with the WECC RC staff. These operators represented a knowledge base of the various sub areas in the WECC Interconnection.

RC Operational Knowledge

The Certification Team was able to evaluate the RCs operational knowledge of the WECC footprint during the interview process. The RCs interviewed were also required to respond to situational questions that covered more specific areas within the RC footprint. The Certification Team found that all RCs interviewed have an adequate operational knowledge of the WECC interconnect. RC Management has also evaluated the strengths of each RC and has developed a schedule rotation to ensure that, to the best of their ability, sub-regional knowledge will be covered for each shift.

RC Hardware and Tools

Knowledge

The Certification Team was able to evaluate the RC knowledge for all hardware, and tools they propose to use to perform the RC function in WECC. The Certification Team found that all RCs interviewed have an adequate operational knowledge of all tools available to them.

Availability

The Certification Team found that hardware and tools available to the RC are adequate for them to perform the RC function in WECC.

Training

Each of the WECC RC Centers has a dedicated trainer and the RC training program is based on a systematic approach to training. Each of the RC operators has completed the training program for the entire WECC footprint. WECC trainers are dedicated to a continuous improvement of their operator training program.

Operator Interviews

Operators interviewed during the review were competent and capable of navigating through the various displays of their EMS, and their study tools. Operators participating in the interviews were able to demonstrate the specific screens and tools that they would use to maintain overall situational awareness of the BES. Operators demonstrated use of the communication tools that would be used in both normal and emergency situations as well as outline various scenarios related to communication failures and how each situation would be handled. Use of the video link between the Vancouver and Loveland RC offices was demonstrated and operators were capable of describing situations that require utilization of this tool. Operators demonstrated how the routine RC duties such as; time error monitoring, use of the WECCnet terminal, the WECC daily report, and operator shift change, would be performed. Operators were confident and capable of demonstrating how they would utilize various tools within the RC to determine a major system disturbance has occurred and they were able to further describe how situations such as; under frequency load shedding, partial

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and total system blackout, and WECC interconnection separation would be recognized and responded to by the WECC RC.

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Attachment 5: EMS

Hardware Configuration and Redundancies

Data from members comes into redundant servers at both sites. Areva EMS with SCADA, Alarm, Network Applications, and necessary supporting applications needed for reliable RC operations. The data is backed-up every 5 minutes for alarms, and 30 minutes for SCADA, this insures reasonable failover transition. OSI-PI is used for both operator displays and data archive.

IT Systems processes, procedures, controls and support staffing

IT and engineering support staff is located at both sites, utilizing a single call-out number for the RC's to access support if needed.

The Certification Team reviewed numerous procedures supporting the management of the various tools, concluding the documentation supports reliable operation. The evidence is stored with the internal NERC servers under the WECC RC Evidence subdirectory. This information may be viewed after appropriate authorization is obtained by NERC.

The Certification Team reviewed several plans and processes for ensuring data and model integrity also concluding the available data is accurate, and upon completion of the open items the RC's will have sufficient data to support operational functions.

Data Availability and Presentation

All members' real-time data enters the EMS prior to populating other tools such as OSI-PI, some analog data is alarmed, and data is presented on one-line station displays, and WECC wide overview display. The Certification Team observed via demonstration many operator displays on the EMS, OSI-PI, and other systems concluding a vast majority are completed, additional refinements as noted in the "Certification Team Findings" section will provide for adequate RC situational awareness.

WECC staff demonstrated the Day-Ahead study tools and process, role-playing with the RC's showing the determination of forecasted reliability issues and the RC or engineer follow-up to confirm results and development of action plans for the RC.

The Certification Team reviewed the alarming scheme, state estimator and real-time contingency analysis results noting the complex and overwhelming number of indicators from the results. The Certification Team made several recommendations to simplify and alert the RC's of key parameters and potential events impacting reliability. The necessary refinements are listed in the "Certification Team Findings" section of this report.

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Attachment 6: Problem Statement Worksheet

1. **Problem Statement**
   WECC's procedures do not adequately list and provide comp measures for those ports and services not used that can not be disabled**.**

   a. Standard / Requirement / Impact to BPS
   CIP-007 R2.3: "In the case where unused ports and services cannot be disabled due to technical limitations, the Responsible Entity shall document compensating measure(s) applied to mitigate risk exposure or an acceptance of risk."

   b. Evidence / observations
   During the evidence presentation, WECC was unable to present the evidence indicating that they would be in compliance with this requirement**.**

   c. Recommended Corrective Actions and Due dates
   WECC to provide a list of unused services and ports that can not be disabled with comp measures.

2. **Problem Statement**
   WECC's RCs have less than adequate understanding of portions of the WECC RC area.

   a. Standard / Requirement / Impact to BPS
   PER-004 R4: "Reliability Coordinator operating personnel shall have an extensive understanding of the Balancing Authorities, Transmission Operators, and Generation Operators within the Reliability Coordinator Area, including the operating staff, operating practices and procedures, restoration priorities and objectives, outage plans, equipment capabilities, and operational restrictions."

   b. Evidence / observations
   WECC RC knowledge of the WECC footprint was not adequate. The RCs were asked to "describe and demonstrate how you would monitor the Puget and Willamette areas for a potential voltage collapse situation." The RCs struggled to find a Willamette substation, did not know who operated/owned the substation, and were not aware of which BA footprint the substation was located in. Once the owner /operator of the Willamette substation (EWEB), a 115kV substation, was established there was no contact information available to the RC in order to communicate with EWEB. Of concern to the Certification Team, the question pertained to an "area" and the RCs were not aware of two separate overview displays available to them to aid in the monitoring of the Willamette area. The RCs were then asked what the RC reaction would be once it is determined that the Willamette area is in a potential voltage collapse situation. The response was that it is a small LSE and the situation would not impact the grid, BPA would take care of it. Additional responses were that the BA is going to take care of these types of problems, WECC RC would only monitor, and all RCs hired by WECC have more than 5 years of experience and know what to do when the time comes**.**

   c. Recommended Corrective Actions and Due Dates
   WECC to ensure RCs have an adequate understanding of the WECC RC area.
   WECC to implement an on-shift RC staffing strategy to utilize current RC

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regional experience and knowledge for the WECC footprint. WECC to provide the RC with a area subject matter expert contact list. WECC to provide contact information to the RC for all interconnection reliability entities referenced in IRO-001 R8. It is the position of the Certification Team that these measures be put in place prior to RC operation**.**

3. **Problem Statement**
   EMS alarm limit changes made either manual or permanent need to be tracked to ensure awareness.

   a. Standard / Requirement / Impact to BPS

      Situational awareness of the BPS.

   b. Evidence / Observations
      The RC was not able to provide evidence that limit changes are tracked.

   c. Recommended Corrective Actions and Due Dates
      Develop a change management procedure for managing changes to alarm limits.

4. **Problem Statement**

   Awareness of generation capability for (maximum / minimum) in EMS.

   a. Standard / Requirement / Impact to BPS
      Situational awareness of the BPS.

   b. Evidence / Observations
      During the restoration questions operators were not able to determine total generation availability by BA or region(s)**.**

   c. Recommended Corrective Actions and Due Dates
      Calculate and display generation capability.

5. **Problem Statement**

   Shift change process needs to incorporate entire log review and include both RC offices.

   a. Standard / Requirement / Impact to BPS
      Situational awareness of the BPS.

   b. Evidence / Observations
      Operators did not include other RC office system conditions in the description of the shift change process**.**

   c. Recommended Corrective Actions and Due Dates
      Revise shift change procedure to ensure coverage for the entire WECC footprint information is exchanged by both the Vancouver and Loveland offices.

6. **Problem Statement**
   Status of all RAS that may have an inter-Balancing Authority or inter-Transmission Operator impact needs to be monitored and tracked.

   a. Standard / Requirement / Impact to BPS
      IRO-005-1 R.12. Situational awareness of the BPS.

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b. Evidence / Observations
A comprehensive list of all RAS status that may have an inter-Balancing Authority, or inter-Transmission Operator impact was not available to operators.

c. Recommended Corrective Actions and Due Dates
Develop methodology to track RAS status.

7. Problem Statement
Static and dynamic reactive reserves for all WECC areas vulnerable to voltage collapse should be calculated and displayed for operators.

a. Standard / Requirement / Impact to BPS
IRO-005 R1.4 "System real and reactive reserves (actual versus required)."

b. Evidence / Observations
Reactive reserve display is currently available for one sub region of WECC.

c. Recommended Corrective Actions and Due Dates
Consider identifying and receiving this information from BAs that are calculating reactive reserves as a stop gap.

8. Problem Statement
Contingencies in RTCA are coded and do not provide the operator a means to identify what equipment is being included.

a. Standard / Requirement / Impact to BPS
IRO-002 R.5, IRO-005 R.1.3. Situational awareness of the BPS.

b. Evidence / Observations
Observed operator call up RTCA and contingencies are coded and not easily identified.

c. Recommended Corrective Actions and Due Dates
Complete specific identification of contingencies.

9. Problem Statement
SCIT calculated nomogram limit and actual flows are not available to the RC.

a. Standard / Requirement / Impact to BPS
Situational awareness of the BPS.

b. Evidence / Observations
Display in PI being built and not yet completed.

c. Recommended Corrective Actions and Due Dates
Complete PI display development and validation. Obtaining the necessary information on SCIT limits and actual from the BA prior to RC transition.

10. Problem Statement
Not all nomograms are available to RC.

a. Standard / Requirement / Impact to BPS
Situational Awareness.

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b. Evidence / Observations
During interviews the SCIT nomogram was not available for Certification Team review.

c. Recommended Corrective Actions and Due Dates
WECC to ensure all nomograms are available to the RC. It is the position of the Certification Team that this be completed prior to RC operation.

11. Problem Statement

WECC-RC does not alert the operator for adequacy of BA real power reserves.

a. Standard / Requirement / Impact to BPS
IRO-005-1 R4 Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements.

IRO-005-1 R1.4 System real and reactive reserves (actual versus required).

IRO-002-1 R6 Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area**.**

b. Evidence / Observations
The RC must drill down into individual BA OSI-PI display to find the required vs. actual real reserves. There is no tool to bring to the attention of the RC that a BA is deficient of real reserves.

c. Recommended Corrective Actions and Due Dates
Add necessary data to an overview display or possibly an alarm or alert mechanism to ensure the RC is alerted when a BA is not meeting their real power reserve requirements.

12. Problem Statement

Voluminous Contingency Analysis results.

a. Standard / Requirement / Impact to BPS
IRO-005-1 R5 Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.

IRO-002-1 R6 Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system

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flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area. **.**

b. Evidence / Observations
STNET result showed 517 branch violations. In addition the WECC-RC operator must "sift" through many/excessive violations to find which ones are important, at times the analysis tool runs again and resets the violation list prior to the WECC-RC being able to complete the "sift" through**.**

c. Recommended Corrective Actions and Due Dates
Facilitate an organization of violations to identify SOL's and BES impacting violations for WECC-RC to review for action**.**

13. Problem Statement

WECC system synchronization point identification incomplete.

a. Standard / Requirement / Impact to BPS
EOP-006-1 R5 Reliability Coordinators shall approve, communicate, and coordinate the re-synchronizing of major system islands or synchronizing points so as not to cause a Burden on adjacent Transmission Operator, Balancing Authority, or Reliability Coordinator Areas**.**

b. Evidence / Observations
Copy of each BA's procedure is available in hardcopy and on Policy tech. The WECC-RC does not have a list of all points and the tools do not identify the inter-BA/TOP synchronization points**.**

c. Recommended Corrective Actions and Due dates
Complete a list of all synchronizing points. Include identification and/or observables of inter-BA/TOP synchronization point in the operator tools.

14. Problem Statement

All BPS (at least "all" 200kv and above) station diagrams "auto-draw" need to be verified/re-drawn for WECC-RC.

a. Standard / Requirement / Impact to BPS
IRO-002-1 R5 Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.

IRO-005-R1 Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following…TOP-006-1 R2 "Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive

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power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources".

b. Evidence / Observations
Some 230kv stations are not listed as re-drawn on the "done or scheduled to be done" list provided by WECC staff.

c. Recommended Corrective Actions and Due Dates
Re-draw/verify/clean-up at least all 200kv and above stations in the EMS.

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