

# **WECC Standard PRC-STD-001 – Certification of Protective Relay Applications and Settings**

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## **A. Introduction**

- 1. Title:** Certification of Protective Relay Applications and Settings
- 2. Number:** PRC-STD-001-1
- 3. Purpose:** Regional Reliability Standard to certify all protective relay applications for the Bulk Power Transmission Paths<sup>1</sup> of the Western Interconnection.
- 4. Applicability**
  - 4.1. This criterion applies to each Transmission Operator or Transmission Owner (as specified in Section B) of a transmission path in the Attachment A – WECC Table 2 (Source: Participants Subject to Criterion)
- 5. Effective Date:** This Western Electricity Coordinating Council Regional Reliability Standard will be effective when approved by the Federal Energy Regulatory Commission under Section 215 of the Federal Power Act. This Regional Reliability Standard shall be in effect for one year from the date of Commission approval or until a North American Standard or a revised Western Electricity Coordinating Council Regional Reliability Standard goes into place, whichever occurs first. At no time shall this regional Standard be enforced in addition to a similar North American Standard.

## **B. Requirements**

WR1.

Each Transmission Operator or Transmission Owner identified in Section 4.1 must submit documentation that an officer of the organization certifies that:

- a. All protective relay applications are appropriate for the Bulk Power Transmission Paths (“BPTP”) identified in Attachment A – Table 2 of this Standard pursuant to applicable WECC Standards and NERC Standards;
- b. The BPTP protective relay settings and logic are appropriate pursuant to applicable WECC Standards and NERC Standards;
- c. Since the last certification or for the last three years all network changes in the path, at the terminals of the path, or in nearby facilities that affect operation of the path have been considered in the protective relay application and settings;
- d. All relay operations since the last certification or during the last three-year period have been analyzed for correctness and appropriate corrective action taken pursuant to applicable WECC Standards and NERC Standards;
- e. Up-to-date relay information has been provided to the on-shift operating personnel and the appropriate Reliability Coordinator.

Note: If a path operator cannot submit certification on behalf of the multiple owners of a path for Protective Relay Application and Settings because the authority for certification resides with one or more path owners, then the path owner(s) shall submit the certification. The path operator

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<sup>1</sup> WECC Table 2

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shall notify the path owner(s) and WECC in writing that the path owner(s) is (are) to submit the certification. (Source: WECC Criterion)

### **C. Measures**

WM1. A Transmission Operator or Transmission Owner identified in Section A.4.1 must accurately complete the Protective Relay Application and Settings Certification form. (Source: Compliance Standard)

### **D. Compliance**

#### **1. Compliance Monitoring Process**

##### **1.1 Compliance Monitoring Responsibility**

Compliance Monitor – British Columbia Utilities Commission

Compliance Monitor's Administrator – Western Electricity Coordinating Council

##### **1.2 Compliance Monitoring Period**

Yearly

On or before September 15 of each year (or such other date as specified in Form A.7), a Transmission Operator or Transmission Owner identified in Section A.4.1 shall submit to the WECC office the completed Protective Relay Application and Settings Certification form as specified in Form A.7 (available on the WECC web site). (Source: Data Reporting Requirement)

##### **1.3 Data Retention**

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

#### **2. Levels of Non-Compliance**

**2.1. Level 1:** There shall be a Level 1 non-compliance if any of the following conditions exist:

2.1.1 The reporting Transmission Operator or Transmission Owner accurately certified to completing items (a) and (b) and all but one of items (c)-(e) listed above in Section B.

**2.2. Level 2:** There shall be a Level 2 non-compliance if any of the following conditions exist:

2.2.1 The reporting Transmission Operator or Transmission Owner accurately certified to completing items (a) and (b) and all but two of items (c)-(e) listed above in Section B.

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**2.3. Level 3:** There shall be a Level 3 non-compliance if any of the following conditions exist:

2.3.1 The reporting Transmission Operator or Transmission Owner accurately certified to completing of items (a) and (b) and to all but three of items (c)-(e) listed above in Section B.

**2.4. Level 4:** There shall be a Level 4 non-compliance if any of the following conditions exist:

2.4.1 The reporting Transmission Operator or Transmission Owner did not certify to completion of either item (a) or (b) or did not certify to the completion of any four of items (c)-(e) listed above in Section B.

### **E. Regional Differences**

**Version History** – Shows Approval History and Summary of Changes in the Action Field

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Tracking</b>
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**ATTACHMENT A**  
**Table 2**  
**Existing WECC Transfer Paths (BPTP)**  
**(Revised February 1, 2006)**

	<b>PATH NAME*</b>	<b>Path Number</b>	<b>Operating Agent</b>
1.	Alberta – British Columbia	1	BCTC/AESO
2.	Northwest – British Columbia	3	BCTC/BPA
3.	West of Cascades – North	4	BPA
4.	West of Cascades – South	5	BPA
5.	West of Hatwai	6	AVA/BPA
6.	Montana to Northwest	8	NWMT
7.	Idaho to Northwest	14	IPC
8.	South of Los Banos or Midway- Los Banos	15	CISO
9.	Idaho – Sierra	16	SPP
10.	Borah West	17	IPC
11.	Idaho – Montana	18	NWMT
12.	Bridger West	19	PAC
13.	Path C	20	PAC
14.	Southwest of Four Corners	22	APS
15.	PG&E – SPP	24	CISO
16.	Northern – Southern California	26	CISO
17.	Intmntn. Power Project DC Line	27	LADWP
18.	TOT 1A	30	WAPA
19.	TOT 2A	31	WAPA
20.	Pavant – Gonder 230 kV Intermountain – Gonder 230 kV	32	SPP/LADWP
21.	TOT 2B	34	PAC
22.	TOT 2C	35	NEVP
23.	TOT 3	36	WAPA
24.	TOT 5	39	WAPA
25.	SDGE – CFE	45	CISO/CFE
26.	West of Colorado River (WOR)	46	CISO
27.	Southern New Mexico (NM1)	47	EPE
28.	Northern New Mexico (NM2)	48	PNM
29.	East of the Colorado River (EOR)	49	APS
30.	Cholla – Pinnacle Peak	50	APS
31.	Southern Navajo	51	APS
32.	Brownlee East	55	IPC
33.	Lugo – Victorville 500 kV	61	CISO/LDWP
34.	Pacific DC Intertie	65	BPA/LADWP
35.	COI	66	BPA/CISO
36.	North of John Day cutplane	73	BPA
37.	Alturas	76	SPP
38.	Montana Southeast	80	NWMT
39.	SCIT**		CISO
40.	COI/PDCI – North of John Day cutplane**		BPA

- For an explanation of terms, path numbers, and definition for the paths refer to WECC's Path Rating Catalog. \*\*  
The SCIT and COI/PDCI-North of John Day Cutplane are paths that are operated in accordance with nomograms identified in WECC's Path Rating Catalog.

## **DEFINITIONS**

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

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

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

**Normal Path Rating** is the maximum path rating in MW that has been demonstrated to WECC through study results or actual operation, whichever is greater. For a path with transfer capability limits that vary seasonally, it is the maximum of all the seasonal values.

**WECC Table 2** means the table maintained by the WECC identifying those transfer paths monitored by the WECC regional Reliability coordinators. As of the date set out therein, the transmission paths identified in Table 2 are as listed in Attachment A of this Standard.

## **EXCUSE OF PERFORMANCE**

### **A. Excused Non-Compliance**

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

### **B. Specific Excuses**

#### **1. Governmental Order**

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

**2. Order of Reliability Coordinator**

The Reliability Entity's compliance or reasonable effort to comply with any instruction, directive, order or suggested action ("Security Order") by the WECC Reliability Coordinator for the WECC sub-region within which the Reliability Entity is operating, provided that the need for such Security Order was not due to the Reliability Entity's non-compliance with (a) the WECC Reliability Criteria for Transmission System Planning, (b) the WECC Power Supply Design Criteria, (c) the WECC Minimum Operating Reliability Criteria, or (d) any other WECC reliability criterion, policy or procedure then in effect (collectively, "WECC Reliability Standards"), and provided further that the Reliability Entity in complying or attempting to comply with such Security Order has taken all reasonable measures to minimize Reliability Entity's noncompliance with the reliability criteria.

**3. Protection of Facilities**

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

**4. Extraordinary Contingency**

- a. Any Extraordinary Contingency (as defined in subsection c); provided that this provision shall apply only to the extent and for the duration that the Extraordinary Contingency actually and reasonably prevented the Reliability Entity from complying with any applicable reliability criteria; and provided further that Reliability

Entity took all reasonable efforts in a timely manner to mitigate the effects of the Extraordinary Contingency and to resume full compliance with all applicable reliability criteria contained in this Standard. Reasonable efforts shall include shedding load, disconnecting facilities, altering generation patterns or schedules on the transmission system, or purchasing energy or capacity, except to the extent that the Reliability Entity demonstrates to the WECC Staff and/or the RCC that in the particular circumstances such action would have been unreasonable. Reasonable efforts shall not include the settlement of any strike, lockout or labor dispute.

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

## **5. Participation in Field Testing**

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