bcuc
British Columbia
Utilities Commission

Suite 410, 900 Howe Street
Vancouver, BC Canada V6Z 2N3
bcuc.com

P: 604.660.4700
TF: 1.800.663.1385
F: 604.660.1102

ORDER NUMBER
R-1-24

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

British Columbia Hydro and Power Authority
Retirement of MOD Mandatory Reliability Standards

BEFORE:
E. B. Lockhart, Panel Chair
E. A. Brown, Commissioner

on January 16, 2024

ORDER

WHEREAS:

A. On December 20, 2023, the British Columbia Hydro and Power Authority (BC Hydro) filed its Mandatory Reliability Standards (MRS) Quarterly Assessment Report (Quarterly Report) for the period September 1, 2023, to November 30, 2023, with the British Columbia Utilities Commission (BCUC), pursuant to Directive 12 of Order R-34-22A1. Within the Quarterly Report, BC Hydro's preliminary assessment recommends that six reliability standards developed by the North American Electric Reliability Corporation and approved by the Federal Energy Regulatory Commission be retired (Retired Standards), effective February 1, 2024 (Application);

B. BC Hydro recommends that the Retired Standards be retired in British Columbia (B.C.) in order to maintain alignment with the United States (U.S.) retirements, effective February 1, 2024. BC Hydro's preliminary assessment of the Retired Standards concludes that these standards may place an undue burden on entities in B.C. if kept enforceable after retirement in the U.S. as they provide little or no reliability benefit, are administrative in nature, relate expressly to commercial or business practices or are redundant with other reliability standards. The Retired Standards are not being superseded or replaced;

C. The BCUC has reviewed the Application and considers the following determinations to be warranted.

NOW THEREFORE pursuant to section 125.2 of the *Utilities Commission Act* the BCUC orders as follows:

1. Reliability standards MOD-001-1a, MOD-004-1, MOD-008-1, MOD-028-2, MOD-029-2a and MOD-030-3 are retired in B.C. effective February 1, 2024.

2. All reliability standards listed in Attachment A to this order are effective in B.C. as of the dates shown. The effective dates for the reliability standards listed in Attachment A supersede the effective dates that were included in any similar list appended to any previous order of the BCUC.

DATED at the City of Vancouver, in the Province of British Columbia, this 16th day of January 2024.

BY ORDER

Original signed by:

E. B. Lockhart
Commissioner

Attachment

British Columbia Utilities Commission
Reliability Standards with Effective Dates adopted in British Columbia

Standard	Name	BCUC Order Adopting	Effective Date
BAL-001-2	Real Power Balancing Control Performance	R-14-16	July 1, 2016
BAL-002-3	Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event	R-21-19	April 1, 2020
BAL-002-WECC-3	Contingency Reserve	R-34-22A1	October 29, 2022
BAL-003-2	Frequency Response and Frequency Bias Setting	R-21-21	October 1, 2021
BAL-004-WECC-3	Automatic Time Error Correction	R-21-19	January 1, 2020
BAL-005-1	Balancing Authority Control	R-33-18	October 1, 2019
CIP-002-5.1a	Cyber Security — BES Cyber System Categorization	R-33-18	October 1, 2018 and as per BC -specific Implementation Plan
CIP-003-8	Cyber Security — Security Management Controls	R-19-20	October 1, 2020 and as per BC -specific Implementation Plan
CIP-004-6[1]	Cyber Security — Personnel & Training	R-39-17	October 1, 2018 and as per BC -specific Implementation Plan
CIP-004-7	Cyber Security — Personnel & Training	R-44-23	October 1, 2025 and as per BC -specific Implementation Plan
CIP-005-6[1]	Cyber Security – Electronic Security Perimeter(s)	R-19-20	April 1, 2023 and as per BC -specific Implementation Plan
CIP-005-7	Cyber Security – Electronic Security Perimeter(s)	R-34-22A1	July 1, 2024 and as per BC -specific Implementation Plan
CIP-006-6	Cyber Security — Physical Security of BES Cyber Systems	R-39-17	October 1, 2018 and as per BC -specific Implementation Plan

[1] Reliability standard is superseded by the revised/replacement reliability standard listed immediately below it as of the effective date(s) of the revised/replacement reliability standard.

Standard	Name	BCUC Order Adopting	Effective Date
CIP-007-6	Cyber Security — System Security Management	R-39-17	October 1, 2018 and as per BC -specific Implementation Plan
CIP-008-6	Cyber Security – Incident Reporting and Response Planning	R-19-20	April 1, 2023
CIP-009-6	Cyber Security — Recovery Plans for BES Cyber Systems	R-39-17	October 1, 2018 and as per BC -specific Implementation Plan
CIP-010-3[1]	Cyber Security – Configuration Change Management and Vulnerability Assessments	R-19-20	April 1, 2023 and as per BC -specific Implementation Plan
CIP-010-4	Cyber Security – Configuration Change Management and Vulnerability Assessments	R-34-22A1	July 1, 2024 and as per BC -specific Implementation Plan
CIP-011-2[1]	Cyber Security – Information Protection	R-39-17	October 1, 2018 and as BC -specific Implementation Plan
CIP-011-3	Cyber Security – Information Protection	R-44-23	October 1, 2025 and as per BC -specific Implementation Plan
CIP-012-1	Cyber Security – Communications between Control Centers	R-21-21	October 1, 2023
CIP-013-1[1]	Cyber Security - Supply Chain Risk Management	R-19-20	April 1, 2023 and as per BC -specific Implementation Plan
CIP-013-2	Cyber Security - Supply Chain Risk Management	R-34-22A1	July 1, 2024 and as per BC -specific Implementation Plan
CIP-014-3	Physical Security	R-44-23	September 8, 2023
COM-001-3	Communications	R-39-17	R1, R2: October 1, 2017 R3-R13: October 1, 2018
COM-002-4	Operating Personnel Communications Protocols	R-32-16A	April 1, 2017
EOP-003-1[2]	Load Shedding Plans	G-67-09	November 1, 2010

[2] Reliability standard would be superseded by EOP-003-2 if adopted in B.C. Adoption of EOP-003-2 pending reassessment.

Standard	Name	BCUC Order Adopting	Effective Date
EOP-003-2[3]	Load Shedding Plans	N/A	Adoption held in abeyance at this time[4]
EOP-004-4	Event Reporting	R-21-19	October 1, 2020
EOP-005-3	System Restoration and Blackstart Resources	R-21-19	October 1, 2020
EOP-006-3	System Restoration Coordination	R-21-19	October 1, 2020
EOP-008-2	Loss of Control Center Functionality	R-21-19	October 1, 2020
EOP-010-1	Geomagnetic Disturbance Operations	R-38-15	R1, R3: October 1, 2016 R2: October 1, 2017
EOP-011-1[1]	Emergency Operations	R-39-17	October 1, 2018
EOP-011-2	Emergency Preparedness and Operations	R-34-22A1	July 1, 2024 and as per BC -specific Implementation Plan
FAC-001-3[1]	Facility Interconnection Requirements	R-33-18	October 1, 2019
FAC-001-3 (errata revision)[1]	Facility Interconnection Requirements	R-44-23	September 8, 2023
FAC-001-4	Facility Interconnection Requirements	N/A	Adoption held in abeyance at this time[4]
FAC-002-3[1]	Facility Interconnection Studies	R-21-21	January 1, 2022
FAC-002-4	Facility Interconnection Studies	N/A	Adoption held in abeyance at this time[4]
FAC-003-4[1]	Transmission Vegetation Management	R-39-17	October 1, 2017
FAC-003-5	Transmission Vegetation Management	R-44-23	October 1, 2025 and as per BC -specific Implementation Plan

[3] Reliability standard is superseded by EOP-011-1 as of the EOP-011-1 effective date in conjunction with PRC-010-2 Requirement 1 if adopted in B.C. Adoption of PRC-010-2 is held in abeyance at this time.

[4] On January 26, 2022, the BCUC Reasons for Decision for Order No. R-4-22, indicated that a separate proceeding would be initiated regarding Planning Coordinator issues and adjourned the Planning Coordinator Assessment Report.

Standard	Name	BCUC Order Adopting	Effective Date
FAC-008-3[1]	Facility Ratings	R-32-14	August 1, 2015 R4 and R5: Retired January 21, 2014[5]
FAC-008-5	Facility Ratings	R-34-22A1	July 1, 2024
FAC-010-3	System Operating Limits Methodology for the Planning Horizon	R-39-17	R1–R4: October 1, 2017 R1-R4: Retired October 1, 2025
FAC-011-3[1]	System Operating Limits Methodology for the Operations Horizon	R-39-17	October 1, 2017
FAC-011-4	System Operating Limits Methodology for the Operations Horizon	R-44-23	October 1, 2025 and as per BC -specific Implementation Plan
FAC-013-2	Assessment of Transfer Capability for the Near Term Transmission Planning Horizon	N/A	Adoption held in abeyance at this time[4, 6]
FAC-014-2[1]	Establish and Communicate System Operating Limits	G-167-10	January 1, 2011
FAC-014-3	Establish and Communicate System Operating Limits	R-44-23	October 1, 2025 and as per BC -specific Implementation Plan
FAC-501-WECC-2	Transmission Maintenance	R-21-19	October 1, 2019
INT-006-5	Evaluation of Interchange Transactions	R-34-22A1	October 29, 2022
INT-009-3	Implementation of Interchange	R-34-22A1	October 29, 2022
IRO-001-4	Reliability Coordination – Responsibilities	R-39-17	October 1, 2017
IRO-002-7	Reliability Coordination – Monitoring and Analysis	R-34-22A1	October 29, 2022

[5] On November 21, 2013, FERC Order 788 (referred to as Paragraph 81) approved the retiring of the reliability standard requirements.
[6] On October 15, 2020, FERC Order No. 873 approved the retirement of the reliability standard in the United States. The reliability standard was not recommended for adoption in B.C. per the Planning Coordinator Assessment Report filed with BCUC on May 31, 2021.

Standard	Name	BCUC Order Adopting	Effective Date
IRO-006-5	Reliability Coordination – Transmission Loading Relief	R-1-13	April 15, 2013
IRO-006-WECC-3	Qualified Transfer Path Unscheduled Flow (**USF**) Relief	R-19-20	January 1, 2021
IRO-008-2[1]	Reliability Coordinator Operational Analyses and Real-time Assessments	R-39-17	October 1, 2017
IRO-008-3	Reliability Coordinator Operational Analyses and Real-time Assessments	R-44-23	October 1, 2025 and as per BC -specific Implementation Plan
IRO-009-2	Reliability Coordinator Actions to Operate Within IROLs	R-39-17	October 1, 2017
IRO-010-3[1]	Reliability Coordinator Data Specification and Collection	R-21-21	January 1, 2022
IRO-010-4	Reliability Coordinator Data Specification and Collection	R-34-22A1	July 1, 2024 and as per BC -specific Implementation Plan
IRO-014-3	Coordination Among Reliability Coordinators	R-39-17	October 1, 2017
IRO-017-1	Outage Coordination	R-39-17	October 1, 2020
IRO-018-1(i)	Reliability Coordinator Real-time Reliability Monitoring and Analysis Capabilities	R-33-18	April 1, 2020
MOD-001-1a	Available Transmission System Capability	G-175-11	November 30, 2011 Retired: February 1, 2024
MOD-004-1	Capacity Benefit Margin	G-175-11	November 30, 2011 Retired: February 1, 2024
MOD-008-1	Transmission Reliability Margin Calculation Methodology	G-175-11	November 30, 2011 Retired: February 1, 2024
MOD-010-0[7]	Steady-State Data for Modeling and Simulation for the Interconnected Transmission System	G-67-09	November 1, 2010

[7] Reliability standard will be superseded by Requirement 2 of MOD-032-1 by the effective date of MOD-032-1 Requirement 2, pending adoption in B.C.

Standard	Name	BCUC Order Adopting	Effective Date
MOD-012-0[7]	Dynamics Data for Modeling and Simulation of the Interconnected Transmission System	G-67-09	November 1, 2010
MOD-025-2	Verification and Data Reporting of Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability	R-38-15 With revised effective dates by Order R-14-20	40% by October 1, 2017 60% by October 1, 2018 80% by October 1, 2019 100% by April 1, 2021
MOD-026-1	Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions	R-38-15	R1: October 1, 2016 R2: 30% by October 1, 2019 50% by October 1, 2021 100% by October 1, 2025 R3-R6: October 1, 2015
MOD-027-1	Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions	R-38-15	R1: October 1, 2016 R2: 30% by October 1, 2019 50% by October 1, 2021 100% by October 1, 2025 R3-R5: October 1, 2015
MOD-028-2	Area Interchange Methodology	R-32-14	August 1, 2014 Retired: February 1, 2024
MOD-029-2a	Rated System Path Methodology	R-39-17	October 1, 2017 Retired: February 1, 2024
MOD-030-3	Flowgate Methodology	R-39-17	October 1, 2017 Retired: February 1, 2024
MOD-031-3	Demand and Energy Data	R-21-21	January 1, 2022
MOD-032-1	Data for Power System Modeling and Analysis	R-38-15	Adoption held in abeyance at this time[4]
MOD-033-1	Steady-State and Dynamic System Model Validation	R-38-15	Adoption held in abeyance at this time[4]
NUC-001-4	Nuclear Plant Interface Coordination	R-21-21	October 1, 2021
PER-003-2	Operating Personnel Credentials	R-21-19	April 1, 2020

Standard	Name	BCUC Order Adopting	Effective Date
PER-005-2	Operations Personnel Training	R-38-15	R1-R4, R6: October 1, 2016 R5: October 1, 2017
PER-006-1	Specific Training for Personnel	R-21-19	October 1, 2021
PRC-002-2[1]	Disturbance Monitoring and Reporting Requirements	R-32-16A	R1, R5: April 1, 2017 R2-R4, R6-R11: staged as per BC -specific Implementation Plan R12: July 1, 2017
PRC-002-3	Disturbance Monitoring and Reporting Requirements	R-44-23	October 1, 2025 and as per BC-specific Implementation Plan
PRC-004-6	Protection System Misoperation Identification and Correction	R-34-22A1	April 1, 2023
PRC-005-1.1b[1, 8]	Transmission and Generation Protection System Maintenance and Testing	R-32-14	January 1, 2015
PRC-005-6	Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance	R-39-17	R1, R2, R5: October 1, 2019 R3, R4: See BC -specific Implementation Plan
PRC-006-5	Automatic Underfrequency Load Shedding	N/A	To be determined[4]
PRC-007-0[9]	Assuring consistency of entity Underfrequency Load Shedding Program Requirements	G-67-09	November 1, 2010
PRC-008-0[8]	Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance Program	G-67-09	November 1, 2010

[8] Reliability standard is superseded by PRC-005-6 as per the PRC-005-6 B.C. specific Implementation Plan.

[9] Reliability standard will be superseded by PRC-006-5 if adopted in B.C.

Standard	Name	BCUC Order Adopting	Effective Date
PRC-009-0[9]	Analysis and Documentation of Underfrequency Load Shedding Performance Following an Underfrequency Event	G-67-09	November 1, 2010
PRC-010-0[1]	Technical Assessment of the Design and Effectiveness of Undervoltage Load Shedding Program	G-67-09	November 1, 2010 R2: Retired January 21, 2014[5]
PRC-010-2	Under Voltage Load Shedding	N/A	Adoption held in abeyance at this time[4]
PRC-011-0[8]	Undervoltage Load Shedding system Maintenance and Testing	G-67-09	November 1, 2010
PRC-012-2	Remedial Action Schemes	R-33-18	October 1, 2021 R1: Attachment 1, Section II Parts 6(d) and 6(e) to be determined.[4] R2: Attachment 2, Section I Parts 7(d) and 7(e) to be determined.[4] R4: To be determined.[4]
PRC-017-1[8]	Remedial Action Scheme Maintenance and Testing	R-39-17	October 1, 2017
PRC-019-2	Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection	R-32-16A With revised effective dates by Order R-14-20	40% by October 1, 2017 60% by October 1, 2018 80% by October 1, 2019 100% by April 1, 2021
PRC-021-1[10]	Under Voltage Load Shedding Program Data	G-67-09	November 1, 2010
PRC-022-1[10]	Under Voltage Load Shedding Program Performance	G-67-09	November 1, 2010 R2: Retired January 21, 2014[5]

[10] Reliability standard is superseded by PRC-010-2 if adopted in B.C.

Standard	Name	BCUC Order Adopting	Effective Date
PRC-023-2[1, 11]	Transmission Relay Loadability	R-41-13	R1-R5: For circuits identified by sections 4.2.1.1 and 4.2.1.4: January 1, 2016 For circuits identified by sections 4.2.1.2, 4.2.1.3, 4.2.1.5, and 4.2.1.6: To be determined[4] R6: To be determined[4]
PRC-023-4[1]	Transmission Relay Loadability	R-39-17	R1-R5 Circuits 4.2.1.1, 4.2.1.4: October 1, 2017 with the exception of Criterion 6 of R1 which will not become effective until PRC-025-2 R1 is completely effective in BC. Until then, PRC-023-2 R1, Criterion 6 will remain in effect. R1-R5 Circuits 4.2.1.2, 4.2.1.3, 4.2.1.5, 4.2.1.6 and R6: To be determined.[4]
PRC-023-5	Transmission Relay Loadability	R-44-23	R1-R5 Circuits 4.2.1.1 and 4.2.1.4: October 1, 2025 except R1 criterion 6 which will not become effective until PRC-025-2 is completely effective in BC. Until then, PRC-023-2 R1 Criterion 6 remains in effect. R1-R5 Circuits 4.2.1.2, 4.2.1.3, 4.2.1.5, 4.2.1.6 and R6: To be determined
PRC-024-2[1]	Generator Frequency and Voltage Protective Relay Settings	R-32-16A With revised effective dates by Order R-14-20	40% by October 1, 2017 60% by October 1, 2018 80% by October 1, 2019 100% by April 1, 2021

[11] PRC-023-2 Requirement 1, Criterion 6 only is superseded by PRC-025-2 as of PRC-025-2's 100 per cent Effective Date.

Standard	Name	BCUC Order Adopting	Effective Date
PRC-024-3	Frequency and Voltage Protection Settings for Generating Resources	R-21-21	October 1, 2023
PRC-025-2	Generator Relay Loadability	R-21-19	October 1, 2019 and staged per BC -specific Implementation Plan
PRC-026-2	Relay Performance During Stable Power Swings	N/A	Adoption held in abeyance at this time[4]
PRC-027-1	Coordination of Protection Systems for Performance During Faults	R-21-19	October 1, 2021
TOP-001-1a[12]	Reliability Responsibilities and Authorities	R-1-13	January 15, 2013
TOP-001-5[1]	Transmission Operations	R-34-22A1	October 29, 2022
TOP-001-6	Transmission Operations	R-44-23	October 1, 2025 and as per BC-specific Implementation Plan
TOP-002-4	Operations Planning	R-39-17 With revised effective dates by Order R-14-20	April 1, 2021
TOP-003-4[1]	Operational Reliability Data	R-21-21	January 1, 2022
TOP-003-5	Operational Reliability Data	R-34-22A1	July 1, 2024 and as per BC -specific Implementation Plan
TOP-007-0[12]	Reporting System Operating Limit (**SOL**) and Interconnection Reliability Operating Limit (**IROL**) Violations	G-67-09	November 1, 2010
TOP-008-1[12]	Response to Transmission Limit Violations	G-67-09	November 1, 2010
TOP-010-1(i)	Real-time Reliability Monitoring and Analysis Capabilities	R-33-18 With revised effective dates by Order R-14-20	April 1, 2021

[12] Refer to "TOP Reliability Standards Supersession Mapping" section below.

Standard	Name	BCUC Order Adopting	Effective Date
TPL-001-4[1]	Transmission System Planning Performance Requirements	R-27-18A	R1: July 1, 2019 R2-R6, R8: July 1, 2020 R7: To be determined[4]
TPL-001-5.1	Transmission System Planning Performance Requirements	N/A	Adoption held in abeyance at this time.[4]
TPL-007-4	Transmission System Planned Performance for Geomagnetic Disturbance Events	N/A	Adoption held in abeyance at this time[4]
VAR-001-5	Voltage and Reactive Control	R-21-19	October 1, 2019
VAR-002-4.1	Generator Operation for Maintaining Network Voltage Schedules	R-33-18	October 1, 2018
VAR-501-WECC-3.1	Power System Stabilizer (**PSS**)	R-33-18	October 1, 2020 R3: For units placed into service after the effective date: January 1, 2021 For units placed into service prior to the effective date: January 1, 2024

British Columbia Utilities Commission

TOP Reliability Standards
Supersession Mapping

This following mapping shows the supersession of Requirements for the following TOP reliability standards by the revised/replacement reliability standards indicated which are either adopted or yet to be adopted in B.C. as of the effective date in the "B.C. Reliability Standards" section above:

TOP-001-1a	—	Reliability Responsibilities and Authorities
TOP-007-0	—	Reporting System Operating Limit (**SOL**) and Interconnection Reliability Operating Limit (**IROL**) Violations
TOP-008-1	—	Response to Transmission Limit Violations

Standard TOP-001-1a — Reliability Responsibilities and Authorities	
Requirement Being Superseded	**Superseding BCUC Approved Standard(s)**
Requirements R1, R2, R4, R5, R6	TOP-001-5
Requirement R3	IRO-001-4 TOP-001-5
Requirement R7	TOP-001-5 TOP-003-4 IRO-010-3
Requirement R8	EOP-003-2, Requirement 1 (adoption held in abeyance in B.C. due to PA/PC dependencies) IRO-009-2

Standard TOP-007-0 — Reporting System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) Violations	
Requirement Being Superseded	**Superseding BCUC Approved Standard(s)**
Requirement R1	IRO-008-2 TOP-001-5
Requirement R2	IRO-009-2 TOP-001-5
Requirement R3	EOP-003-2, Requirement 1 (adoption held in abeyance in B.C. due to PA/PC dependencies) IRO-009-2
Requirement R4	IRO-008-2

Standard TOP-008-1 — Response to Transmission Limit Violations	
Requirement Being Superseded	**Superseding BCUC Approved Standard(s)**
Requirements R1	EOP-003-2, Requirement 1 (adoption held in abeyance in BC due to PA/PC dependencies) TOP-001-5
Requirements R2 and R3	TOP-001-5
Requirement R4	TOP-001-5 TOP-002-4 TOP-003-4