



SIXTH FLOOR, 900 HOWE STREET, BOX 250
VANCOUVER, BC V6Z 2N3 CANADA
web site: <http://www.bcuc.com>

**BRITISH COLUMBIA
UTILITIES COMMISSION**

**ORDER
NUMBER G-175-11**

TELEPHONE: (604) 660-4700
BC TOLL FREE: 1-800-663-1385
FACSIMILE: (604) 660-1102

**IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473**

and

**A Mandatory Reliability Standards Assessment Report No. 4
by British Columbia Hydro and Power Authority
and the Determination of Reliability Standards for Adoption in British Columbia**

BEFORE: L.F. Kelsey, Commissioner
D. Morton, Commissioner
N.E. MacMurchy, Commissioner

October 20, 2011

ORDER

WHEREAS:

- A. Pursuant to section 125.2(2) of the *Utilities Commission Act* (the Act) the British Columbia Utilities Commission (the Commission) has exclusive jurisdiction to determine whether a “reliability standard” as defined in the Act, is in the public interest and should be adopted in British Columbia;
- B. Ministerial Order No. MO39 dated February 22, 2009, made a Mandatory Reliability Standards Regulation which prescribes the parties that are subject to reliability standards adopted under section 125.2(6) of the Act;
- C. In order to facilitate the Commission’s consideration of reliability standards, British Columbia Hydro and Power Authority (BC Hydro) is required under section 125.2(3) of the Act to review each reliability standard and provide the Commission with a report assessing: (a) any adverse impact of the reliability standard on the reliability of electricity transmission in British Columbia if the reliability standard were adopted; (b) the suitability of the reliability standard for British Columbia; (c) the potential cost of the reliability standard if it were adopted; and (d) any other matter prescribed by regulation or identified by order of the Commission;
- D. On May 26, 2011, BC Hydro filed Mandatory Reliability Standards Assessment Report No. 4 (Report) pursuant to section 125.2(3) of the Act, assessing six new reliability standards (MOD-001-1a, MOD-004-1, MOD-008-1, MOD-028-1, MOD-029-1a and MOD-030-02) developed by the North American Electric Reliability Corporation (NERC);
- E. BC Hydro concluded that the six new reliability standards are suitable for adoption in British Columbia;

**BRITISH COLUMBIA
UTILITIES COMMISSION**

**ORDER
NUMBER** G-175-11

2

- F. Pursuant to section 125.2(5)(a) of the Act, the Commission posted the Report on its website at www.bcuc.com and by Order G-114-11 dated July 12, 2011, directed BC Hydro to publish a Notice of Mandatory Reliability Standards Assessment Report No. 4 and Process for Public Comments, and established the Regulatory Timetable for comments;
- G. No Comments were received;
- H. The Commission has reviewed and considered the Report and the reliability standards assessed in it. The Commission determines that the standards assessed in BC Hydro's Mandatory Reliability Standards Assessment Report No. 4 are in the public interest and should be adopted in British Columbia to maintain or achieve consistency with other jurisdictions that have adopted the reliability standards, subject to the terms of this Order;
- I. The Commission considers that it is appropriate to provide an effective date for entities to come into compliance with the reliability standards to be adopted in this Order.

NOW THEREFORE the Commission orders as follows:

- 1. The Commission adopts, subject to Directive 4 that follows, MOD-001-1a, MOD-004-1, MOD-008-1, MOD-028-1, MOD-029-1a and MOD-030-02, in the form submitted by BC Hydro and attached as Attachment B to this Order, to be effective as of November 30, 2011 (the Effective Date).
- 2. The Commission directs that individual requirements within reliability standards that incorporate by reference reliability standards that have not been adopted by the Commission are of no force or effect.
- 3. The Commission adopts the Compliance Provisions, as defined in the Rules of Procedure for Reliability Standards in British Columbia, that accompany each of the adopted British Columbia reliability standards, in the form directed by the Commission to be posted on the WECC website, as amended from time to time.
- 4. As a result of this Order and Orders G-67-09, G-167-10 and G-162-11 the standards listed in the table found in Attachment A to this Order are the reliability standards adopted in British Columbia.

DATED at the City of Vancouver, in the Province of British Columbia, this 28th day of October 2011.

BY ORDER

Original signed by:

D. Morton
Commissioner

Attachment

Approved Standards for BC

(Standards shaded in grey are the standards assessed in BC Hydro's Assessment Report No. 4)

Standard	Standard Name	BCUC Order Adopting
BAL-001-01a	Real Power Balancing Control Performance	G-167-10
BAL-002-0	Disturbance Control Performance	G-67-09
BAL-003-0.1b	Frequency Response and Bias	G-167-10
BAL-004-0	Time Error Correction	G-67-09
BAL-004-WECC-01	Automatic Time Error Correction	G-167-10
BAL-005-0.1b	Automatic Generation Control	G-167-10
BAL-006-1.1	Inadvertent Interchange	G-167-10
BAL-STD-002-1	Operating Reserves	G-67-09
CIP-001-1	Sabotage Reporting	G-67-09
CIP-002-1	Cyber Security – Critical Cyber Asset Identification	G-67-09
CIP-002-1	Cyber Security – Critical Cyber Asset Identification	G-67-09
CIP-002-2	Cyber Security – Critical Cyber Asset Identification	G-162-11
CIP-002-3	Cyber Security – Critical Cyber Asset Identification	G-162-11
CIP-003-1	Cyber Security – Security Management Controls	G-67-09
CIP-003-2	Cyber Security – Security management Controls	G-162-11
CIP-003-3	Cyber Security – Security Management Controls	G-162-11
CIP-004-1	Cyber Security – Personnel and Training	G-67-09
CIP-004-2	Cyber Security – Personnel and Training	G-162-11
CIP-004-3	Cyber Security – Personnel and Training	G-162-11
CIP-005-1	Cyber Security – Electronic Security Perimeter(s)	G-67-09
CIP-005-2	Cyber Security – Electronic Security Perimeter(s)	G-162-11
CIP-005-3	Cyber Security – Electronic Security Perimeter(s)	G-162-11
CIP-006-1	Cyber Security – Physical Security of Critical Cyber Assets	G-67-09
CIP-006-2c	Cyber Security – Physical Security of Critical Cyber Assets	G-162-11
CIP-006-3c	Cyber Security – Physical Security of Critical Cyber Assets	G-162-11
CIP-007-1	Cyber Security – Systems Security Management	G-67-09
CIP-007-2a	Cyber Security – Systems Security Management	G-162-11
CIP-007-3	Cyber Security – Systems Security Management	G-162-11
CIP-008-1	Cyber Security – Incident Reporting and Response Planning	G-67-09
CIP-008-2	Cyber Security – Incident Reporting and Response Planning	G-162-11
CIP-008-3	Cyber Security – Incident Reporting and Response Planning	G-162-11
CIP-009-1	Cyber Security – Recovery Plans for Critical Cyber Assets	G-67-09
CIP-009-2	Cyber Security – Recovery Plans for Critical Cyber Assets	G-162-11
CIP-009-3	Cyber Security – Recovery Plans for Critical Cyber Assets	G-162-11

Standard	Standard Name	BCUC Order Adopting
COM-001-1.1	Telecommunications	G-167-10
COM-002-2	Communication and Coordination	G-67-09
EOP-001-0	Emergency Operations Planning	G-67-09
EOP-002-2.1	Capacity and Energy Emergencies	G-167-10
EOP-003-1	Load Shedding Plans	G-67-09
EOP-004-1	Disturbance Reporting	G-67-09
EOP-005-1	System Restoration Plans	G-67-09
EOP-006-1	Reliability Coordination – System Restoration	G-67-09
EOP-008-0	Plans for Loss of Control Center Functionality	G-67-09
EOP-009-0	Documentation of Blackstart Generating Unit Test Results	G-67-09
FAC-001-0	Facility Connector Requirements	G-67-09
FAC-002-0	Coordination of Plans for New Generation, Transmission, and End-User	G-67-09
FAC-003-1	Transmission Vegetation Management Program	G-67-09
FAC-008-1	Facility Ratings Methodology	G-67-09
FAC-009-1	Establish and Communicate Facility Ratings	G-67-09
FAC-010-2	System Operating Limits Methodology for the Planning Horizon	G-167-10
FAC-010-2.1	System Operating Limits Methodology for the Planning Horizon	G-162-11
FAC-011-2	System Operating Limits Methodology for the Operations Horizon	G-167-10
FAC-013-1	Establish and Communicate Transfer Capability	G-67-09
FAC-014-2	Establish and Communicate System Operating Limits	G-167-10
INT-001-3	Interchange Information	G-67-09
INT-003-2	Interchange Transaction Implementation	G-67-09
INT-004-2	Dynamic Interchange Transaction Modifications	G-67-09
INT-005-2	Interchange Authority Distributes Arranged Interchange	G-67-09
INT-005-3	Interchange Authority Distributes Arranged Interchange	G-162-11
INT-006-2	Response to Interchange Authority	G-67-09
INT-006-3	Response to Interchange Authority	G-162-11
INT-007-1	Interchange Confirmation	G-67-09
INT-008-2	Interchange Authority Distributes Status	G-67-09
INT-008-3	Interchange Authority Distributes Status	G-162-11
INT-009-1	Implementation of Interchange	G-67-09
INT-010-1	Interchange Coordination Exemptions	G-67-09
IRO-001-1.1	Reliability Coordination Responsibilities and Authorities	G-167-10

Standard	Standard Name	BCUC Order Adopting
IRO-002-1	Reliability Coordination – Facilities	G-67-09
IRO-003-2	Reliability Coordination – Wide Area View	G-67-09
IRO-004-1	Reliability Coordination – Operations planning	G-67-09
IRO-005-2	Reliability Coordination – Current Day Operations	G-167-10
IRO-006-4	Reliability Coordination-Transmission Loading Relief	G-67-09
IRO-006-4.1	Reliability Coordination – Transmission Loading Relief	G-162-11
IRO-014-1	Procedures, Processes, or Plans to Support Coordination Between Reliability coordinators	G-67-09
IRO-015-1	Notification and Information Exchange	G-97-09
IRO-016-1	Coordination of Real-Time Activities	G-67-09
IRO-STD-006-0	Qualified Path Unscheduled Flow Relief	G-67-09
MOD-001-1a	Available Transmission Capability System Methodology	G-175-11
MOD-004-1	Capacity Benefit Margin	G-175-11
MOD-006-0.1	Procedure for the Use of Capacity Benefit Margin Value	G-167-10
MOD-007-0	Documentation of the Use of Capacity Benefit Margin	G-67-09
MOD-008-1	TRM Calculation Methodology	G-175-11
MOD-010-0	Steady-State Data for Modeling and Simulation for the Interconnected Transmission System	G-67-09
MOD-012-0	Dynamics Data for Modeling and Simulation of the Interconnected Transmission System	G-67-09
MOD-016-1.1	Documentation of Data Reporting Requirements for Actual and Forecast Demand, New Energy for Load, and Controllable Demand-Side Management	G-167-10
MOD-017-0.1	Aggregated Actual and Forecast Demands and Net Energy for Load	G-167-10
MOD-018-0	Treatment of Non member Demand Data and How Uncertainties are Addressed in the Forecasts of Demand and Net Energy for Load	G-67-09
MOD-019-0.1	Reporting of Interruptible Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators	G-167-10
MOD-020-0	Providing Interruptible Demands and Direct Control Load management Data to System Operators and Reliability Coordinators	G-67-09
MOD-021-0	Documentation of the Accounting Methodology for the Effects of Demand-Side management in Demand and Energy Forecasts	G-67-09
MOD-021-0.1	Documentation of the Accounting Methodology for the Effects of Demand-Side Management in Demand and Energy Forecasts	G-162-11

Standard	Standard Name	BCUC Order Adopting
MOD-028-1	Area Interchange Methodology	G-175-11
MOD-029-1a	Rated System Path Methodology	G-175-11
MOD-030-02	Flowgate Methodology	G-175-11
NUC-001-2	Nuclear Plant Interface Coordination	G-167-10
PER -004-1	Reliability Coordination – Staffing	G-67-09
PER-001-0	Operating Personnel Responsibility and Authority	G-67-09
PER-001-0.1	Operating Personnel Responsibility and Authority 2009/06/08	G-162-11
PER-002-0	Operating Personnel Training	G-67-09
PER-003-0	Operating Personnel Credentials	G-67-09
PRC-001-1	System Protection Coordination	G-67-09
PRC-004-1	Analysis and Mitigation of Transmission and Generation Protection Misoperations	G-67-09
PRC-005-1	Transmission and Generation Protection System Maintenance and Testing	G-67-09
PRC-007-0	Assuring consistency of entity Underfrequency Load Shedding Program Requirements	G-67-09
PRC-008-0	Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance Program	G-67-09
PRC-009-0	Analysis and Documentation of Underfrequency Load Shedding Performance Following an Underfrequency Event	G-67-09
PRC-010-0	Technical Assessment of the Design and Effectiveness of Undervoltage Load Shedding Program	G-67-09
PRC-011-0	Undervoltage Load Shedding system Maintenance and Testing	G-67-09
PRC-015-0	Special Protection System Data and Documentation	G-67-09
PRC-016-0.1	Special Protection System Misoperations	G-167-10
PRC-017-0	Special Protection System Maintenance and Testing	G-67-09
PRC-018-1	Disturbance Monitoring Equipment Installation and Data Reporting	G-67-09
PRC-021-1	Under Voltage Load Shedding Program Data	G-67-09
PRC-022-1	Under Voltage Load Shedding Program Performance	G-67-09
PRC-023-1	Transmission Relay Loadability	G-162-11
PRC-STD-001-1	Certification of Protective Relay Applications and Settings	G-67-09
PRC-STD-003-1	Protective Relay and Remedial Action Misoperation Scheme	G-67-09
PRC-STD-005-1	Transmission Maintenance	G-67-09
TOP-001-1	Reliability Responsibilities and Authorities	G-67-09

Standard	Standard Name	BCUC Order Adopting
TOP-002-2	Normal Operations Planning	G-67-09
TOP-002-2a	Normal Operations Planning	G-162-11
TOP-003-0	Planned Outage Coordination	G-67-09
TOP-004-2	Transmission Operations	G-167-10
TOP-005-1.1	Operational Reliability Information	G-167-10
TOP-006-1	Monitoring System Conditions	G-67-09
TOP-007-0	Reporting System Operating Unit (SOL) and Interconnection Reliability Operating Limit (IROL) Violations	G-67-09
TOP-008-1	Response to Transmission Unit Violations	G-67-09
TOP-STD-007-0	Operating Transfer Capability	G-67-09
TPL-001-0.1	System Performance Under Normal (No Contingency) Conditions (Category A)	G-167-10
TPL-002-0	System Performance Following Loss of a Single Bulk Electric System Element (Category B)	G-67-09
TPL-002-0a	System Performance Following Loss of a Single Bulk Electric System Element (Category B)	G-162-11
TPL-003-0	System Performance Following Loss of a Single Bulk Electric System Element (Category C)	G-67-09
TPL-003-0a	System Performance Following Loss of a Single Bulk Electric System Element (Category C)	G-162-11
TPL-004-0	System Performance Following Loss of a Single Bulk Electric System Element (Category D)	G-67-09
VAR-001-1	Voltage and Reactive Control	G-67-09
VAR-002-1.1a	Generator Operation for Maintaining Network Voltage Schedules	G-167-10
VAR-002-1.1b	Generator Operation for Maintaining Network Voltage Schedules	G-162-11
VAR-STD-002a-1	Automatic Voltage Regulators	G-67-09
VAR-STD-002b-1	Power System Stabilizer	G-67-09

Append Attachment B pdf file.