

ARC Operations Work Group Assessment and Conversion of NERC PRC-009-0 to Alberta PRC-009-AB-0 UFLS Performance Following an Underfrequency Event

Section	NERC PRC-009-0	Alberta PRC-009-AB-0	Reason for Difference
Purpose	Provide last resort System preservation measures by implementing an Under Frequency Load Shedding (UFLS) program.	The purpose of this reliability standard is to ensure effectiveness of the UFLS program performance.	
Applicability	<p>4.1. Transmission Owner required by its Regional Reliability Organization to own a UFLS program</p> <p>4.2. Transmission Operator required by its Regional Reliability Organization to operate a UFLS program</p> <p>4.3. Load-Serving Entity required by the Regional Reliability Organization to operate a UFLS program</p> <p>4.4. Distribution Provider required by the Regional Reliability Organization to own or operate a UFLS program</p>	ISO	Identified the applicable entity in Alberta.
Effective Date	April 1, 2005	Ten calendar days after the date of approval by the Commission.	
Definitions		Italicized terms used in this reliability standard have the same meanings as set out in the Alberta Reliability Standards Glossary of Terms and Part 1 of the ISO Rules. ¹	Added definitions section to the Alberta reliability standard.
Requirement	R1. The Transmission Owner, Transmission Operator, Load-Serving Entity and Distribution Provider that owns or operates a UFLS program (as required by its Regional	R1. The ISO must analyze and document its UFLS program performance in accordance with WECC's UFLS program. The analysis must address the performance of UFLS	Identified the ISO as the responsible entity in for this requirement. Information is provided to the ISO by facility

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Deleted: 4.1. Transmission Owner required by its Regional Reliability Organization to own a UFLS program¶
4.2. Transmission Operator required by its Regional Reliability Organization to operate a UFLS program¶
4.3. Load-Serving Entity required by the Regional Reliability Organization to operate a UFLS program¶
4.4. Distribution Provider required by the Regional Reliability Organization to own or operate a UFLS program

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Deleted: Transmission Owner, Transmission Operator, Load-Serving Entity and Distribution Provider that owns or operates a UFLS program (as required by its Regional Reliability Organization) shall

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¹ Defined terms are not italicized in this document, but will appear in the Alberta Reliability Standards document.

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	Reliability Organization) shall analyze and document its UFLS program performance in accordance with its Regional Reliability Organization's UFLS program. The analysis shall address the performance of UFLS equipment and program effectiveness following system events resulting in system frequency excursions below the initializing set points of the UFLS program. The analysis shall include, but not be limited to: R1.1 A description of the event including initiating conditions R1.2 A review of the UFLS set points and tripping times. R1.3 A simulation of the event. R1.4 A summary of the findings.	equipment and program effectiveness following system events resulting in system frequency excursions below the initializing set points of the UFLS program. The analysis shall include, but not be limited to: <ul style="list-style-type: none"> • A description of the event including initiating conditions • A review of the UFLS set points and tripping times. • A simulation of the event. • A summary of the findings. 	owners and operators in accordance with OPP 1304 System Event Monitoring and Disturbance Reporting.
Measure	M1. Each Transmission Owner's, Transmission Operator's, Load-Serving Entity's and Distribution Provider's documentation of the UFLS program performance following an underfrequency event includes all elements identified in Reliability Standard PRC-009-0_R1.	<u>MR1. Disturbance document(s) exist for each UFLS event. The disturbance document(s) contain analysis of the event.</u>	Developed appropriate measures for the requirement.
Requirement	R2. The Transmission Owner, Transmission Operator, Load-Serving Entity, and Distribution Provider that owns or operates a UFLS program (as required by its Regional	<u>R2. The JSO must provide documentation of the analysis of the UFLS program performance to WECC on request and within the timeframe specified by WECC and</u>	Identify the responsible entity in Alberta. Provided clarity that

Deleted: M1. Each Transmission Owner's, Transmission Operator's, Load-Serving Entity's and Distribution Provider's documentation of the UFLS program performance following an underfrequency event includes all elements identified in Reliability Standard PRC-009-0_R1.

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	Reliability Organization) shall provide documentation of the analysis of the UFLS program to its Regional Reliability Organization and NERC on request 90 calendar days after the system event.	<u>agreed to by the ISO.</u>	documentation includes analysis of UFLS program performance as indicated in NERC measure M2. Alberta Variance²: Clarified that the ISO only provides information to the WECC and not to NERC.
Measure	M2. Each Transmission Owner, Transmission Operator, Load-Serving Entity and Distribution Provider that owns or operate a UFLS program, shall have evidence it provided documentation of the analysis of the UFLS program performance following an underfrequency event as specified in Reliability Standard PRC-009-0_R1.	<u>MR2. Written confirmation from WECC that documentation was received.</u>	Identified the type of evidence to be provided.
Procedures			
Compliance	1. Compliance Monitoring Process 1.1. Compliance Monitoring Responsibility Compliance Monitor: Regional Reliability Organization. 1.2. Compliance Monitoring Period and Reset Timeframe On request 90 calendar days after the system event. 1.3. Data Retention		There is no compliance section currently proposed in the Alberta Reliability Standards. A compliance program will be developed at a later date for Alberta Reliability Standards that recognizes the compliance monitoring and enforcement

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² An Alberta Variance is a change from the US Reliability Standard that the AESO has determined is material.

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Section	NERC PRC-009-0	Alberta PRC-009-AB-0	Reason for Difference
	None specified. 1.4. Additional Compliance Information None. 2. Levels of Non-Compliance 2.1. Level 1: Analysis of UFLS program performance following an actual underfrequency event below the UFLS set point(s) was incomplete in one or more elements in Reliability Standard PRC-009-0_R1. 2.2. Level 2: Not applicable. 2.3. Level 3: Not applicable. 2.4. Level 4: Analysis of UFLS program performance following an actual underfrequency event below the UFLS set point(s) was not provided.		structure in Alberta. This approach is deemed consistent with the existing ISO Rules.
Regional Differences	None identified.	None identified.	Not applicable in Alberta

Proposed Terms for the Alberta Reliability Standard Glossary:

None specified.

Defined Terms Used in this Standard:

(As included in the ISO Rules Definitions or Alberta Reliability Standards Glossary)

- reliability standard
- Commission



- ISO
- day
- under frequency load shedding (UFLS)
- WECC