

ARC Operations Work Group Assessment and Conversion of NERC PRC-021-1 to Alberta PRC-021-AB-1 Under Voltage Load Shedding Program Data			
Section	NERC PRC-021-1	Alberta PRC-021-AB-1	Reason for Difference <sup>1</sup>
<b>Purpose</b>	Ensure data is provided to support the Regional database maintained for Under-Voltage Load Shedding (UVLS) programs that were implemented to mitigate the risk of voltage collapse or voltage instability in the Bulk Electric System (BES).	<u>The purpose of this reliability standard is to ensure data is provided to support the <a href="#">Regional WECC</a> database maintained for <del>Under-Voltage voltage Load load Shedding shedding</del> (UVLS) programs that were implemented to mitigate the risk of voltage collapse or voltage instability in the Bulk Electric System (BES).</u>	Excluded last portion of the NERC purpose as it just describes why UVLS programs are implemented.
<b>Applicability</b>	4.1. Transmission Owner that owns a UVLS program. 4.2. Distribution Provider that owns a UVLS program.	<u>This reliability standard applies to:</u> <ul style="list-style-type: none"> <li><del>4.1. Transmission Owner TFOs and demand customers, WOs, transmission connected end-use customers and industrial systems</del> that owns a UVLS program system.</li> <li><del>4.2. Distribution Provider that owns a UVLS program.</del> <u>ISO</u></li> </ul>	
<b>Effective Date</b>	August 1, 2006	<u>August 1, 2006</u> 10 calendar days after the date of approval by the Commission.	

<sup>1</sup> The following revisions have been made throughout this proposed reliability standard:

- Identified the responsible entities in Alberta.
- Applied a consistent writing style and added clarity.
- Changed passive terms such as “shall” to “must”.

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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. <sup>2</sup>	Added definitions section to the Alberta reliability standard.
Requirement	<b>R1.</b> Each Transmission Owner and Distribution Provider that owns a UVLS program to mitigate the risk of voltage collapse or voltage instability in the BES shall annually update its UVLS data to support the Regional UVLS program database. The following data shall be provided to the Regional Reliability Organization for each installed UVLS system:	<p><del><b>R1.</b> Each Transmission Owner and Distribution Provider that owns a UVLS program to mitigate the risk of voltage collapse or voltage instability in the BES shall</del> <u>The ISO must annually</u> update its UVLS data <u>annually</u> to support the <u>Regional WECC</u> UVLS <u>program</u> database.</p> <p><b>R2.</b> <u>The ISO must provide the</u> following data <u>shall be provided to the Regional Reliability Organization WECC</u> for each installed UVLS system <u>in Alberta that is in the WECC UVLS database</u>:</p> <ul style="list-style-type: none"> <li>• Size and location of <u>customer</u> load, or percent of connected load, to be interrupted.</li> <li>• Corresponding voltage set points and overall scheme clearing times.</li> <li>• Time delay from initiation to trip signal.</li> </ul>	<p>Identified the regional entity-.</p> <p>Added a requirement to identify obligations of TFOs and WOs to provide data to the ISO.</p>

<sup>2</sup> Defined terms are not italicized in this document, but will appear in the Alberta Reliability Standards document.

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		<ul style="list-style-type: none"> <li>• Breaker operating times.</li> <li>• Any other schemes that are part of or impact the UVLS programs, <u>including without limitation such as</u> related generation protection, islanding schemes, automatic load restoration schemes, UFLS and <u>RAS (identified as “Special Protection Systems” by WECC) Special Protection Systems.</u></li> </ul> <p><u>R3. TFOs and demand customers WOs, transmission connected end-use customers and industrial systems must upon request by the ISO, provide UVLS data to the ISO; provided that the TFO or demand customer may meet this requirement R3 by providing UVLS data in accordance with ISO rules.</u></p>	

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Measure		<p><u>MR1. Evidence that the UVLS data update process was completed within 12 months of the previous update.</u></p> <p><u>MR2. Written confirmation from WECC that UVLS data was received.</u></p> <p><u>MR3. Written confirmation from the ISO that UVLS data was received.</u></p>	Developed measures specific to the requirements.
Requirement	R1.1. Size and location of customer load, or percent of connected load, to be interrupted.	<del>R1.1. Size and location of customer load, or percent of connected load, to be interrupted.</del>	NERC requirements R1.1 to R1.5 are included in Alberta requirement R2.
Measure			
Requirement	R1.2. Corresponding voltage set points and overall scheme clearing times.	<del>R1.2. Corresponding voltage set points and overall scheme clearing times.</del>	
Measure			
Requirement	R1.3. Time delay from initiation to trip signal.	<del>R1.3. Time delay from initiation to trip signal.</del>	
Measure			
Requirement	R1.4. Breaker operating times.	<del>R1.4. Breaker operating times.</del>	
Measure			
Requirement	R1.5. Any other schemes that are part of or impact the UVLS programs such as related generation protection, islanding schemes, automatic load restoration schemes, UFLS and Special Protection Systems.	<del>R1.5. Any other schemes that are part of or impact the UVLS programs such as related generation protection, islanding schemes, automatic load restoration schemes, UFLS and Special Protection Systems.</del>	

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Measure	<b>M1.</b> Each Transmission Owner and Distribution Provider that owns a UVLS program shall have documentation that its UVLS data was updated annually and includes all items specified in Requirement 1.1 through 1.5.	<del>M1. Each Transmission Owner and Distribution Provider that owns a UVLS program shall have documentation that its UVLS data was updated annually and includes all items specified in Requirement 1.1 through 1.5.</del>	
Requirement	<b>R2.</b> Each Transmission Owner and Distribution Provider that owns a UVLS program shall provide its UVLS program data to the Regional Reliability Organization within 30 calendar days of a request.	<del>R42. Each Transmission Owner and Distribution Provider that owns a UVLS program shall</del> <u>The ISO must</u> provide its UVLS program data to the <u>Regional Reliability Organization WECC</u> within 30 calendar days of a <u>written request to do so from WECC.</u>	Identified the regional entity.
Measure	<b>M2.</b> Each Transmission Owner and Distribution Provider that owns a UVLS program shall have evidence it provided the Regional Reliability Organization with its UVLS program data within 30 calendar days of a request.	<del>M2. Each Transmission Owner and Distribution Provider that owns a UVLS program shall have evidence it provided the Regional Reliability Organization with its UVLS program data within 30 calendar days of a request.</del> <u>MR4. Written confirmation from WECC that data was received within 30 calendar days of a request.</u>	Identified the type of evidence required.
Procedures			
Compliance	To view the compliance section D of the NERC reliability standard follow this link: <a href="http://www.nerc.com/files/PRC-021-1.pdf">http://www.nerc.com/files/PRC-021-1.pdf</a>		There is no compliance section currently proposed in the Alberta Reliability Standards.



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			<p>A compliance program will be developed at a later date for Alberta Reliability Standards that recognizes the compliance monitoring and enforcement structure in Alberta.</p> <p>This approach is deemed consistent with the existing ISO Rules.</p>
<b>Regional Differences</b>	None identified.	None identified.	Not applicable in Alberta



### **Proposed Terms for the Alberta Reliability Standard Glossary:**

*The proposed defined terms for “transmission connected end-use customer” and “owner of industrial system” that were in the draft 2 version of the comparison document were deleted because the use of the functional entity “demand customer” effectively replaced the need for the use of these terms in the reliability standard.*

### **Defined Terms Used in this Standard:**

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

Glossary)

- Commission
- demand customers
- ISO
- transmission facility owner (TFO)
- under frequency load shedding (UFLS)
- under voltage load shed (UVLS)
- WECC
- wire owner (WO)
- reliability standard
- load