

## **EOP-003-AB1-1 Load Shedding Plans**

### **1. Purpose**

The purpose of this *reliability standard* is to ensure plans are in place and plans are implemented to shed *load* when there is insufficient generation or transmission capacity, to mitigate the risk of an uncontrolled failure of the *Interconnection*.

### **2. Applicability**

This *reliability standard* applies to the entities listed below:

- (a) ~~TFOs~~ the operator of a transmission facility that is part of the bulk electric system;
- (b) ~~demand customers~~ a market participant receiving service under Rate DTS of the ISO tariff, unless such service is used solely for supplying station service to a generating unit or an aggregated generating facility.
- (c) the operator of an electric distribution system ~~WSPs~~ who ~~are~~ is a counterparty ~~ies~~ to an agreement with ~~the demand customer~~ a market participant receiving service under Rate DTS of the ISO tariff, for the provision of *load* shedding services; ~~and~~.
- (d) the ISO.

This *reliability standard* does not apply to the operator of a transmission facility whose transmission facility is a radial connection from a generating unit or an aggregated generating facility to either the transmission system or to transmission facilities within the city of Medicine Hat.

### **3. Definitions**

Italicized terms used in this *reliability standard* have the meanings as set out in the ~~Alberta Reliability Standards Glossary of Terms and Part 1 of the ISO Rules Consolidated Authoritative Document Glossary~~.

### **4. Requirements**

- R1** When the AIES is operating with insufficient generation or transmission capacity and after considering all remedial steps, the *ISO* must issue *directives* to shed *load*.
  - R1.1** ~~Demand customers~~ Each market participant and ~~WSPs~~ operator of an electric distribution system must shed *load* or reduce *MW* inflow as directed by the *ISO*.
  - R1.2** When coordination with the *ISO* is not possible or practicable, and after considering all remedial steps, the operator of a transmission facility ~~TFO~~, when operating with insufficient generation or transmission capacity, must shed *load* rather than risk an uncontrolled failure of components or *cascading* of the *Interconnection*.
- R2** The *ISO* must establish plans for automatic *load* shedding for *underfrequency* or under voltage conditions.

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- R3 The ISO must submit *UFLS* plans to *WECC* for coordination of *UFLS* plans among other *interconnected transmission operators* and *balancing authorities*.
- R4 The ISO must coordinate *UVLS* plans among other *interconnected transmission operators* and *balancing authorities* external to Alberta.
- R5 The ISO must consider one or more of these factors in designing an automatic *load* shedding scheme: frequency, rate of frequency decay, voltage level, rate of voltage decay, or power flow levels.
- R6 The ISO must implement automatic *load* shedding in *MW* blocks established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.
- R7 After the *AIES* separates from the *Interconnection*, if there is insufficient generating capacity to restore frequency following automatic *underfrequency load shedding*, the ISO must issue *directives* to shed additional *load*.
- R8 The ISO must coordinate automatic *load* shedding throughout Alberta with *underfrequency* isolation of generating units, tripping of shunt capacitors, and other automatic actions that will occur under abnormal frequency, voltage, or power flow conditions.
- R9 The ISO must have procedures for directing operator controlled manual *load* shedding to respond to real-time emergencies.
- R10 The ISO must be capable of directing manual *load* shedding in a time frame adequate for responding to the emergency.
- R11 ~~Demand customers~~ Each market participant and ~~WSPs~~ operator of an electric distribution system must be capable of implementing manual *load* shedding in a time frame adequate for responding to the emergency.

### 5. Processes and Procedures

No procedures have been defined for this *reliability standard*.

### 6. Measures

The following measures correspond to the requirements identified in Section 4 of this *reliability standard*. For example, MR1 is the measure for R1.

These measures will be used by the ISO in carrying out its *compliance monitoring* duties in accordance with *ISO rule 12*. The ISO may consider other data and information, including any provided by a *market participant*.

- MR1 Voice recordings and logs exist to confirm the ISO issued *directives* to shed *load*.
  - MR1.1 Electronic logs, metering or electronic data exists to confirm the *market participant* or operator of an electric distribution system shed *load*.
  - MR1.2 Electronic logs and/or electronic data exist to confirm the ~~TFO~~ operator of a transmission facility shed *load*.
- MR2 Automatic *load* shedding plans exist. Plans meet the defined need of *load* shedding situations.
- MR3 Written confirmation from *WECC* that the ISO submitted *UFLS* plans.

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- MR4** Written confirmation from *interconnected transmission operators* and *balancing authorities* external to Alberta indicating that the *ISO* coordinated *UVLS* plans.
- MR5** One or more of these factors were considered in the design of the *load shed* scheme.
- MR6** One or more *MW* blocks exist in *load shed* plans or schemes.
- MR7** Voice recordings and logs exist to confirm the *ISO* issued *directives* to shed additional *load*.
- MR8** *ISO rules*, *interconnection* standards or studies exist to show coordination with automatic actions.
- MR9** Procedures exist for directing operator controlled manual *load* shedding.
- MR10** Electronic logs, and/or voice recordings exist to confirm the *ISO* directed manual *load* shedding. Manual *load* shedding is performed in a time frame adequate to respond to the emergency as defined in operating procedures or equipment ratings.
- MR11** Electronic logs, metering or electronic data exists to confirm the manual *load* shedding. Manual *load* shedding is performed in a time frame adequate to respond to the emergency as defined in operating procedures or equipment ratings.

### 7. Appendices

No appendices have been defined for this *reliability standard*.

### 8. Guidelines

No guidelines have been defined for this *reliability standard*.

### Revision History

Effective	Description
<a href="#">2012-12-17</a> <del>***</del>	<a href="#">Administrative update – “TFO”, “demand customer” and “WSP” replaced with “operator of a transmission facility”, “market participant receiving service under Rate DTS of the ISO tariff” and “operator of an electric distribution system”; and other cleanup items.</a>
2009-06-17	New Issue