Alberta Reliability Standard
Communications
COM-001-AB-3

1. Purpose

The purpose of this **reliability standard** is to establish voice communication capabilities necessary to maintain the reliable operation of the **interconnected electric system**.

2. Applicability

This **reliability standard** applies to:

(a) the **operator** of a **transmission facility**;

(b) the **operator** of an **electric distribution system** that is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat;

(c) the **operator** of a **generating unit** that is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat and has a **maximum authorized real power** greater than or equal to 5 MW;

(d) the **operator** of an **aggregated generating facility** that is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat and has a **maximum authorized real power** greater than or equal to 5 MW; and

(e) the **ISO**.

For the purpose of the requirements contained herein, the above list of entities will be collectively referred to as “Responsible Entities”. For requirements in this **reliability standard** where a specific entity or subset of entities are the applicable entity or entities, the entity or entities are specified explicitly.

3. Requirements

R1 The **ISO** must, as it determines to be necessary to maintain reliability, have primary voice communication capability to communicate with the following entities, unless the **ISO** detects a failure of its primary voice communication capability, in which case requirement R10 applies:

(a) each **operator** of a **transmission facility**;

(b) each **operator** of an **electric distribution system** that is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat;

(c) each **operator** of a **generating unit** that is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat and has a **maximum authorized real power** greater than or equal to 5 MW;

(d) each **operator** of an **aggregated generating facility** that is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat and has a **maximum authorized real power** greater than or equal to 5 MW;

(e) each adjacent **reliability coordinator** within the **WECC**; and

(f) each adjacent **interconnected transmission operator** directly connected to Alberta.

R2 The **ISO** must designate a backup voice communication capability in each control room to communicate with the following entities:

(a) each **operator** of a **transmission facility**;

(b) each **operator** of an **electric distribution system** that is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat;

(c) each **operator** of a **generating unit** that is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat and has a **maximum authorized real power** greater than or equal to 5 MW;

(d) each **operator** of an **aggregated generating facility** that is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat and has a **maximum authorized real power** greater than or equal to 5 MW; and

(e) each adjacent **reliability coordinator** within the **WECC**;

(f) each adjacent **interconnected transmission operator** directly connected to Alberta.

R3 Each **operator** of a **transmission facility** must have primary voice communication capability to communicate with the following entities, unless the **operator** of a **transmission facility** detects a failure of its primary voice communication capability in which case requirement R10 shall apply:

(a) the **ISO;**

(b) each adjacent **operator** of a **transmission facility** that is directly connected to its **transmission facility**;

(c) each **operator** of an **electric distribution system** that is directly connected to its **transmission facility**;

(d) each **operator** of a **generating unit** that is directly connected to its **transmission facility** and has a **maximum authorized real power** greater than or equal to 5 MW;

(e) each operator of an **aggregated generating facility** that is directly connected to its **transmission facility** and has a **maximum authorized real power** greater than or equal to 5 MW; and

(f) each adjacent **interconnected transmission operator** that is directly connected to its **transmission facility**.

R3.A1[1] Each **operator** of a **transmission facility** must use a primary voice communication capability that is:

(a) a direct access telephone on the public telephone network;

(b) not degraded by any other communication functionality or any other data transfer activities if there is any shared equipment; and

(c) located in each control room.

R4 Each **operator** of a **transmission facility** must designate a backup voice communication capability with the following entities:

(a) the **ISO**;

(b) each adjacent **operator** of a **transmission facility** that is directly connected to its **transmission facility**;

(c) each **operator** of an **electric distribution system** that is directly connected to its **transmission facility**;

(d) each **operator** of a **generating unit** that is directly connected to its **transmission facility** and has a **maximum authorized real power** greater than or equal to 5 MW;

(e) each **operator** of an **aggregated generating facility** that is directly connected to its **transmission facility** and has a **maximum authorized real power** greater than or equal to 5 MW; and

[1] Any requirement that contains an A in the designation, such as R3.A1, is an additional **ISO** requirement that was established by the **ISO** for use in its **balancing authority area** and was not derived from a NERC COM-001-3 requirement.

(f) each adjacent **interconnected transmission operator** that is directly connected to its **transmission facility**.

R4.A1 Each **operator** of a **transmission facility** must have the type of backup voice communication capability, in each control room**,** as identified in:

(a) Appendix 1 for communicating with the **ISO**; and

(b) Appendix 2 for communicating with each entity specified in requirement R4.

R5 Intentionally left blank.

R6 Intentionally left blank.

R7 Each **operator** of an **electric distribution system** must have primary voice communication capability to communicate with the following entities, unless the **operator** of an **electric distribution system** detects a failure of its primary voice communication capability in which case requirement R11 shall apply:

(a) the **ISO**; and

(b) the **operator** of a **transmission facility** that is directly connected to its **electric distribution system**.

R7.A1 Each **operator** of an **electric distribution system** must use a primary voice communication capability that is:

(a) a direct access telephone on the public telephone network;

(b) not degraded by any other communication functionality or any other data transfer activities if there is any shared equipment; and

(c) located in each control room.

R7.A2 Each **operator** of an **electric distribution system** must have the type of backup voice communication capability, in each control room, as identified in:

(a) Appendix 1 for communicating with the **ISO**; and

(b) Appendix 3 for communicating with each entity specified in requirement R7.

R8 Each **operator** of a **generating unit** and **operator** of an **aggregated generating facility** must have primary voice communication capability to communicate with the following entities, unless the **operator** of a **generating unit** or **operator** of an **aggregated generating facility** detects a failure of its primary voice communication capability in which case requirement R11 applies:

(a) the **ISO**; and

(b) the **operator** of a **transmission facility** that is directly connected to its **generating unit** or **aggregated generating facility**.

R8.A1 Each **operator** of a **generating unit** and **operator** of an **aggregated generating facility** must use a primary voice communication capability that is:

(a) a direct access telephone on the public telephone network;

(b) not degraded by any other communication functionality or any other data transfer activities if there is any shared equipment; and

(c) located in each control room.

R8.A2 Each **operator** of a **generating unit** and **operator** of an **aggregated generating facility** must have the type of backup voice communication capability, in each control room, as identified in:

(a) Appendix 1 for communicating with the **ISO**; and

(b) Appendix 3 for communicating with each entity specified in requirement R8.

R9 The Responsible Entities must test each backup voice communication capability, as specified in Appendix 1, Appendix 2, and Appendix 3, at least once each **month**. If the test is unsuccessful, the Responsible Entity must initiate action to repair or designate a temporary replacement backup voice communication capability within 2 hours of the unsuccessful test.

R10 The **ISO** and each **operator** of a **transmission facility** must notify entities as identified in requirements R1 and R3, respectively within 60 minutes of the detection of a failure of its primary voice communication capability that lasts 30 minutes or longer.

R11 Each **operator** of an **electric distribution system**, **operator** of a **generating unit**, and **operator** of an **aggregated generating facility** that detects a failure of its primary voice communication capability must consult with each entity affected by the failure, as identified in requirement R7 for an **operator** of an **electric distribution system** or requirement R8 for an **operator** of a **generating unit** or **operator** of an **aggregated generating facility**, to determine a mutually agreeable action for the restoration of its primary voice communication capability.

R12 The **ISO** and each **operator** of a **transmission facility**, **operator** of a **generating unit**, and **operator** of an **aggregated generating facility** must have internal primary voice communication capabilities for the exchange of information necessary for the reliable operation of the **interconnected electric system**. This includes internal primary voice communication capabilities between its control rooms, and between its control rooms and field personnel.

R13 Each **operator** of an **electric distribution system** must have internal primary voice communication capabilities for the exchange of information necessary for the reliable operation of the **interconnected electric system**. This includes internal primary communication capabilities between its control rooms, and between its control rooms and field personnel.

R14.A1 Each Responsible Entity must, where its backup voice communication capability is a satellite telephone service, use a satellite network system, as approved by the **ISO**.

R15.A1 Each Responsible Entity must, where its backup voice communication capability is a satellite telephone service or utility orderwire service,[2] have backup voice communication equipment that remains operational for a minimum of 8 hours in the event of an extended power outage to its facilities.

4. Measures

The following measures correspond to the requirements identified in section 3 of this **reliability standard**. For example, MR1 is the measure for requirement R1.

MR1 Evidence of having primary voice communication capability as required in requirement R1 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

[2] "utility orderwire service" means a private voice communications system that is operated and controlled by one or more **market participant** and the **ISO**. The utility orderwire service: leverages utility telecommunication network infrastructure owned by a **market participant** and the **ISO**; and may also leverage passive telecommunication infrastructure owned by a third-party.

MR2 Evidence of designating a backup voice communication capability as required in requirement R2 exists. Evidence may include physical assets, or dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR3 Evidence of having primary voice communication capability as required in requirement R3 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR3.A1 Evidence of using a primary voice communication capability as required in requirement R3.A1 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR4 Evidence of designating a backup voice communication capability as required in requirement R4 exists. Evidence may include physical assets, or dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR4.A1 Evidence of having a backup voice communication capability as required in requirement R4.A1 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR5 Intentionally left blank.

MR6 Intentionally left blank.

MR7 Evidence of having primary voice communication capability as required in requirement R7 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR7.A1 Evidence of using a primary voice communication capability as required in requirement R7.A1 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR7.A2 Evidence of having a backup voice communication capability as required in requirement R7.A2 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR8 Evidence of having primary voice communication capability as required in requirement R8 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR8.A1 Evidence of using a primary voice communication capability as required in requirement R8.A1 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR8.A2 Evidence of having a backup voice communication capability as required in requirement R8.A2 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR9 Evidence of testing backup voice communication capability as required in requirement R9 exists. Evidence may include dated and time-stamped test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

Evidence of initiating action to repair or designating a replacement of backup voice communication capability, which does not utilize the same infrastructure as voice communication used for day-to-day operation, as required in requirement R9 exists. Evidence may include dated and time-stamped test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR10 Evidence of notifying entities, within the minimum timeframe, after a detection of a failure of its primary voice communication capability as required in requirement R10 exists. Evidence may include dated and time-stamped test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR11 Evidence of consulting with each entity affected by the failure of its primary voice communication capability as required in requirement R11 exists. Evidence may include dated **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR12 Evidence of having internal primary voice communication capability as required in requirement R12 exists. Evidence may include physical assets, or dated evidence, such as, equipment specifications and installation documentation, operating procedures, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR13 Evidence of having internal primary voice communication capability as required in requirement R13 exists. Evidence may include physical assets, or dated evidence, such as, equipment specifications and installation documentation, operating procedures, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR14.A1 Evidence of using a satellite network system as a backup voice communication capability as required in requirement R14.A1 exists. Evidence may include physical assets, dated evidence, such as, equipment specifications and installation documentation, test records, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

MR15.A1 Evidence of ensuring a backup voice communication capability complies with the minimum operation in the event of an extended power outage as required in requirement R15.A1 exists. Evidence may include dated and time-stamped records of operations, such as, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.

Appendices

Appendix 1 – *Responsible Entity Requirements for Each Backup Voice Communication Capability with the ISO*

Appendix 2 – *Operator of a Transmission Facility Requirements for Each Backup Voice Communication Capability with Adjacent Entities and Entities that are Directly Connected to its Transmission Facility*

Appendix 3 – *Operator of an Electric Distribution System, Operator of a Generating Unit, and Operator of an Aggregated Generating Facility Requirements for Each Backup Voice Communication Capability with Operators of Transmission Facilities that is Directly Connected to its Electric Distribution System, Generating Unit, or Aggregated Generating Facility*

Revision History

Date	Description
xxxx-xx-xx	Initial release.

Appendix 1
Responsible Entity Requirements for Each Backup Voice Communication Capability with the ISO

Responsible Entity Category	Responsible Entity subcategory	Responsible Entity Backup Voice Communication Capability Options for Communicating with the ISO
Each **operator** of a **transmission facility**	that operates a **transmission facility**, unless it only operates a **radial circuit**.	(1) Utility orderwire service
	that only operates a **radial circuit**.	(1) Utility orderwire service; (2) Satellite telephone service; or (3) Direct access telephone service.
Each **operator** of an **electric distribution system**		(1) Utility orderwire service; (2) Satellite telephone service; or (3) Direct access telephone service.
Each **operator** of a **generating unit** and **operator** of an **aggregated generating facility** connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat where the **maximum authorized real power** is	less than 50 MW based on the total amount of generation operated by the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	(1) Utility orderwire service; or (2) Direct access telephone service.
	equal to or greater than 50 MW and less than 300 MW based on the total amount of generation operated by the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	(1) Utility orderwire service; or (2) Satellite telephone service.
	equal to or greater than 300 MW based on the total amount of generation operated by the control room, where the total synchronous generation is less than 300 MW, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	(1) Utility orderwire service; or (2) Satellite telephone service.
	equal to or greater than 300 MW based on the total amount of synchronous generation operated by the control room or a **blackstart resource**.	(1) Utility orderwire service

Appendix 2
Operator of a Transmission Facility Requirements for Each Backup Voice Communication Capability with Adjacent Entities and Entities that are Directly Connected to its Transmission Facility

Entity	**Entity Subcategory Responsible Entity Backup Voice Communication System Options for Communicating with the ISO**	**Operator of a Transmission Facility Backup Voice Communication Capability Options for Communicating with Each Adjacent Entity**
Each adjacent **operator** of a **transmission facility** that is directly connected to its **transmission facility**	that operates a **transmission facility**, unless it only connects through a **radial circuit**.	(1) Utility orderwire service; or (2) An **operator** of a **transmission facility** that only operates a **radial circuit** may use satellite telephone service or direct access telephone service.
	that only operates a **radial circuit**.	(1) Utility orderwire service; (2) Satellite telephone service; or (3) Direct access telephone service.
Each **operator** of an **electric distribution system** that is directly connected to its **transmission facility**		(1) Utility orderwire service; (2) Satellite telephone service; or (3) An **operator** of **electric distribution system** connected only to a substation that is part of a **radial circuit** may use direct access telephone service
Each **operator** of a **generating unit** or **aggregated generating facility** that is directly connected to its **transmission facility** and the **maximum authorized real power** is:	Equal to or greater than 5 MW and less than 50 MW based on the total amount of generation operated by the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**;	(1) Utility orderwire service; or (2) Direct access telephone service.
	equal to or greater than 50 MW and less than 300 MW based on the total amount of generation operated by the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**;	(1) Utility orderwire service; or (2) Satellite telephone service.
	equal to or greater than 300 MW based on the total amount of generation operated by the control room, where the total synchronous generation is less than 300 MW, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**; and	(1) Utility orderwire service; or (2) Satellite telephone service.
	equal to or greater than 300 MW based on the total amount of	(1) Utility orderwire service

	synchronous generation operated by the control room or a **blackstart resource**.	
Each adjacent **interconnected transmission operator** that is directly connected to its **transmission facility**		(1) Utility orderwire service; or (2) Satellite telephone service.

Appendix 3
Operator of an Electric Distribution System, Operator of a Generating Unit, and Operator of an Aggregated Generating Facility Requirements for Each Backup Voice Communication Capability with Each Operator of Transmission Facility* that is Directly Connected to its Electric Distribution System, Generating Unit, or Aggregated Generating Facility

Responsible Entity Category	**Responsible Entity Subcategory**	**Responsible Entity Backup Voice Communication Capability Options for Communicating with the Operator of a Transmission Facility that is Directly Connected to Its Electric Distribution System, Generating Unit, or Aggregated Generating Facility**
Each **operator** of an **electric distribution system**		(1) Utility orderwire service; (2) Satellite telephone service; or (3) An **operator** of **electric distribution system** connected only to a substation that is part of a **radial circuit** may use direct access telephone service.
Each **operator** of a **generating unit** and each **operator** of an **aggregated generating facility** connecting to the **transmission system** or to **transmission facilities** within the City of Medicine Hat where the **maximum authorized real power** is:	less than 50 MW based on the total amount of generation operated by the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	(1) Utility orderwire service; or (2) Direct access telephone service.
	equal to or greater than 50 MW and less than 300 MW based on the total amount of generation operated by the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	(1) Utility orderwire service; or (2) Satellite telephone service.
	equal to or greater than 300 MW based on the total amount of generation operated by the control room, where the total synchronous generation is less than 300 MW, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	(1) Utility orderwire service; or (2) Satellite telephone service.
	equal to or greater than 300 MW based on the total amount of synchronous generation operated by the control room or is a **blackstart resource**.	(1) Utility orderwire service

*Appendix 3 does not include requirements for each **operator** of a **transmission facility**