

ISO Rules

Part 500 Facilities

Division 502 Technical Requirements

Section 502.17 Voice Communication System Requirements



Applicability

1(1) Section 502.17 applies to the following **market participants**:

- (a) the **operator** of a **generating unit**;
- (b) the **operator** of an **aggregated generating facility**;
- (c) the **operator** of a **transmission facility**;
- (d) the **operator** of an **electric distribution system**;
- (e) a **pool participant**; and
- (f) the **ISO**.

Variations Required for Safe and Reliable Operation

2(1) The **ISO** may require a **market participant** to comply with any additional requirements of this section 502.17 if the **ISO** determines that such compliance is critical for the safe and reliable operation of the **interconnected electric system**.

(2) The **ISO** must, if it identifies a situation contemplated by subsection 2(1), notify the affected **market participant** in writing and, after discussion with the **market participant**, confirm an appropriate effective date for compliance.

Requirements for Primary and Backup Voice Communication System for the ISO

3(1) The **ISO** must have primary and backup voice communication systems at its coordination centre and other back up locations to exchange communications with the control room of:

- (a) each adjacent interconnected transmission **operator** directly connected to Alberta;
- (b) each adjacent **balancing authority** directly connected to Alberta; and
- (c) each adjacent **reliability coordinator** within the Western **Interconnection**.

(2) The **ISO** must have the primary and back up communication systems in its coordination centre and other back up locations to exchange communications with the control room of any **market participant** that is required to comply with the provisions of this section 502.17.

(3) The **ISO** must have primary and backup voice communication systems between its coordination centre and back up locations.

Requirements for Primary and Backup Voice Communication System with the ISO

4(1) A **market participant** must have the primary voice communication system and, where identified, one of the backup voice communication systems at each of their control rooms and **control centres** to the **ISO** coordination centre and other back up locations as required by *Table 1 - Requirements for Primary and Backup Voice Communications Systems with the ISO* in Appendix 1.

(2) A **market participant** that has a primary communication system with the **ISO** must ensure that the primary voice communication system is:

- (a) a commercial service with direct access telephone connection;
- (b) not degraded by any other communication or data transfer activities if there is any shared equipment or functionality associated with the connection;

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- (c) automatically forwarded to another number if the primary number is busy; and
- (d) prohibited from using voicemail.

(3) Each **market participant** listed in *Table 1 - Requirements for Primary and Backup Voice Communications Systems* in Appendix 1 must ensure that its backup voice communication system with the **ISO** is an independent system with no common single point of failure with the primary voice communication system.

(4) A **market participant** may, notwithstanding any other provision of this section 502.17, use the same voice communication system for its primary and backup communication systems with the **ISO** if no other backup option is feasible and the **ISO** agrees in writing.

(5) A **market participant** must, where its backup voice communication system is a satellite network telephone, use the same satellite network system the **ISO** uses.

(6) A **market participant** must, where its backup voice communication system is a utility orderwire system, use telecommunication infrastructure the **market participant** and **legal owners of transmission facilities** each operate, and not depend on the commercial telecommunications system.

(7) An operator of a wind or solar **aggregated generating facility** without a control room located near the facility and that can be disconnected by operator of the directly connected transmission facility or electric distribution system, notwithstanding any other provision of this section 502.17, are not required to have voice communication systems to their **aggregated generating facility**.

(8) A **market participant** whose control centre is outside of Alberta may, notwithstanding any other provision of this section 502.17, receive a variance for its backup communication system with the **ISO** and the **ISO** agrees in writing.

Requirements for Primary and Backup Voice Communication Systems between Market Participants

5(1) A **market participant** must have the primary voice communication system and, where identified, one of the backup voice communication systems from their control rooms and **control centres** to the other **market participants** as required by *Table 2 - Requirements for Primary and Backup Voice Communications Systems between Market Participants* of Appendix 2.

(2) Each **market participant** listed in *Table 2 - Requirements for Primary and Backup Voice Communications Systems between Market Participants* in Appendix 2 must ensure that its backup voice communication system with any other **market participant** is an independent system with no common single point of failure with the primary voice communication system, and:

- (a) where the backup voice communication system is a satellite network telephone, it must use the same satellite network system between **market participants**; and
- (b) where the backup voice communication system is a utility orderwire system, it must use telecommunication infrastructure the **market participant** and the **legal owners** of the **transmission facility** operate, and not depend on the commercial telecommunications system.

(3) A **market participant** may, notwithstanding any other provision of this section 502.17, use the same voice communication system for its primary and backup communication systems with other **market participants** if no other backup option is feasible and the **ISO** agrees in writing.

(4) Each **operator** of a **transmission facility** that is required to have the primary communication system and one of the backup communication systems identified in *Table 2 - Requirements for Primary and Backup Voice Communications Systems between Market Participants* in Appendix 2, must have such

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communications with each of the following entities:

- (a) the **operator** of an **electric distribution system** with which it is directly connected to;
- (b) the **operator** of a **generating unit** and the **operator** of an **aggregated generating facility** with which it is directly connected;
- (c) each adjacent **operator** of a **transmission facility**; and
- (d) each adjacent **interconnected transmission operator** that is directly connected to Alberta.

(5) An **operator** of an **electric distribution system** must have the primary voice communication system and one of the backup communication systems required by *Table 2 - Requirements for Primary and Backup Voice Communications Systems between Market Participants* in Appendix 2 with a directly connected **operator** of a **transmission facility**.

(6) An **operator** of a **generator unit** or an **operator** of an **aggregated generating facility** must have the primary voice communication system and one of the backup communication systems required by *Table 2 - Requirements for Primary and Backup Voice Communications Systems between Market Participants* in Appendix 2 with a directly connected **operator** of a **transmission facility** or **operator** of an **electric distribution system**.

(7) An operator of a wind or solar **aggregated generating facility** without a control room located near the facility and can be disconnected by the directly connected transmission facility or electric distribution system, notwithstanding any other provision of this section 502.17, are not required to have voice communication systems to their facility.

(8) A **market participant** whose control centre is outside of Alberta may, notwithstanding any other provision of this section 502.17, receive a variance for its backup communication system with the ISO and the ISO agrees in writing. [Requirements for Internal Communication Capabilities](#)

6(1) Each of the **operator** of a **transmission facility** and **operator** of an **electric distribution system** must have field voice communication systems between their **control centres** and their field personnel which remain operational for a minimum of 8 hours in the event of an extended power outage affecting its facilities.

(2) A **market participant** that has multiple control rooms or control centres that control the same facility, must ensure that voice communication systems exist between these control rooms or control centres.

Maintenance and Restoration of Primary and Backup Voice Communication Systems

7(1) A **market participant** required to have primary and backup voice communication systems must ensure that all of its primary and backup voice communication systems are maintained in accordance with **good electric industry practice**.

(2) Each **operator** of a **generating unit** and **operator** of an **aggregated generating facility** required to have primary and backup voice communication systems must ensure that its primary and backup voice communication systems meet the restoration requirements in the following table based on their **maximum authorized real power**.

Maximum Authorized Real Power	Mean Time To Repair
<50MW	48 hours

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$\geq 50\text{MW}$ and $< 300\text{MW}$	24 hours
$\geq 300\text{MW}$	4 hours

(3) Each control centre of an **operator** of a **transmission facility** and **operator** of an **electric distribution system** required to have both primary and backup voice communication systems must ensure that each of its primary and backup voice communication systems have a restoration mean time to repair of 4 hours or less.

(4) Regardless of 7(2) and 7(3) longer mean time to repair shall be permitted in extenuating circumstances, with agreement with the ISO for restoration timelines and plan.

Extended Power Outage

8(1) Each **market participant** required to have a backup communication system that is an:

- (a) **operator** of a **generating unit**;
- (b) **operator** of an **aggregated generating facility** greater than or equal to 50 MW;
- (c) **operator** of a **transmission facility** excluding those who only operate a radial **transmission facility**, or
- (d) **operator** of an **electric distribution system** who contributes load additions for **black start capability** process requirement

must ensure that its backup voice communication equipment located within its facilities remains operational for a minimum of 8 hours in the event of an extended power outage to its facilities.

(2) Each **operator** of a **transmission facility** and **operator** of an **electric distribution system** with a centralized **control centre** must ensure that its backup voice communication equipment remains operational for a minimum of 48 hours in the event of an extended power outage to its facilities.

Loss of Primary Voice Communication Systems

9(1) The **ISO** must notify the entities that it is required to have backup communications with, within 60 minutes of the detection of a failure of its primary voice communication system that last 30 minutes or longer.

(2) A **market participant** that is required to have backup communication systems must notify the **ISO** and the entities with whom it has backup communication systems, within 60 minutes of the detection of a failure of its primary voice communication system that lasts 30 minutes or longer.

(3) A **market participant** that does not have backup communication systems must initiate or coordinate action to determine a mutually agreeable action for the restoration of its voice communication systems capability with:

- (a) the **ISO**; and
- (b) each **operator** of a **transmission facility** to which it is directly connected to that may be affected by a failure.

Loss of Back Up Communication Systems

10 Each of the **ISO** and a **market participant** must, if any of their required backup communication

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systems experience a material disruption or complete failure outside a test period, initiate or coordinate action to repair, or designate a replacement backup communication system within 2 hours after becoming aware of the disruption or loss of the back up communication system.

Testing of Back Up Communication Systems

11(1) Each of the **ISO** and a **market participant** with a backup voice communication system must test its backup voice communication systems at least once each **month** to verify successful two-way voice communication.

(2) Each of the **ISO** and a **market participant** must, if the monthly test conducted pursuant to subsection 11(1) is unsuccessful, initiate or coordinate action to repair, or designate a replacement back up communication system within 2 hours of the unsuccessful test.

Appendices

Appendix 1 – *Table 1 - Requirements for Primary and Backup Voice Communications Systems with the ISO*

Appendix 2 - *Table 2 - Requirements for Primary and Backup Voice Communications Systems between Market Participants*

Revision History

Date	Description
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Appendix 1

Table 1 - Requirements for Primary and Backup Voice Communications Systems with the ISO

<u>Market Participant Subcategory</u>	<u>Primary and Backup Requirements</u>
1. (Pool) A pool participant who may receive an energy market dispatch or a directive.	P
2. (Ancillary) A pool participant who may receive a dispatch for ancillary services or a directive.	P / OW SAT BKD
3. (DER) The operator of a generating unit or aggregated generating facilities connecting to the interconnected electric system or to facilities within the City of Medicine Hat at a nominal voltage of less than 69kV.	P
4. (<50MW) The operator of a generating unit or aggregated generating facilities connecting to the transmission system or to transmission facilities within the City of Medicine Hat where the aggregated maximum authorized real power is less than 50 MW.	P /BKD OW
5. (<300MW) The operator of a generating unit or aggregated generating facilities connecting to the transmission system or to transmission facilities within the City of Medicine Hat where the aggregated maximum authorized real power is equal to or greater than 50MW and less than 300MW.	PC / SAT OW
6. (>=300MW) The operator of a generating unit or aggregated generating facilities connecting to the transmission system or to transmission facilities within the City of Medicine Hat where the aggregated maximum authorized real power is equal to or greater than 300 MW.	PC / OW
7. (blackstart) The operator of a generating unit providing a black start capability service.	PC / OW
8. (TFO) The operator of a transmission facility, except those who only operate radial transmission system equipment.	PC / OW
9. (Radial) The operator of a transmission facility operating only radial transmission system equipment.	PC / OW SAT BKD
10. (DFO) The operator of an electric distribution system, except those who contributes load additions for black start capability process requirements.	P
11. (DFO blackstart) The operator of an electric distribution system who contributes load additions for black start capability process requirements.	P / OW SAT BKD

- The defined primary and, if specified, one of the backup options is required as per 4(1)

<u>Legend</u>	<u>Primary Voice Communication</u>
PC	A commercial service with a primary direct access telephone connection from the control room, with the telephone having mute and conference call capabilities.
P	A commercial service with primary direct access telephone connection from the control room.
<u>Emergency and Backup Voice Communication</u>	
OW	A utility orderwire service from the control room.
SAT	A satellite network telephone service from the control room.
BKD	A backup direct access telephone connection from the control room.

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Appendix 2

Table 2 - Requirements for Primary and Backup Voice Communications Systems between Market Participants

Market Participant Subcategory	<u>4. (<50MW)</u>	<u>5. (<300MW)</u>	<u>6. (>=300MW)</u>	<u>7. (blackstart)</u>	<u>8. (TFO)</u>	<u>9. (Radial)</u>	<u>10. (DFO)</u>	<u>11. (DFO blackstart)</u>
<u>4. (<50MW)</u> The operator of a generating unit or aggregated generating facilities connecting to the transmission system or to transmission facilities within the City of Medicine Hat where the aggregated maximum authorized real power is less than 50 MW.					P, BKD OW	P, BKD OW		
<u>5. (<300MW)</u> The operator of a generating unit or aggregated generating facilities connecting to the transmission system or to transmission facilities within the City of Medicine Hat where the aggregated maximum authorized real power is equal to or greater than 50MW and less than 300MW.					PC, OW SAT	PC, OW SAT		
<u>6. (>=300MW)</u> The operator of a generating unit or aggregated generating facilities connecting to the transmission system or to transmission facilities within the City of Medicine Hat where the aggregated maximum authorized real power is equal to or greater than 300 MW.					PC, OW	PC, OW		
<u>7. (blackstart)</u> The operator of a generating unit providing a black start capability service.					PC, OW	PC, OW		
<u>8. (TFO)</u> The operator of a transmission facility, except those who only operate radial transmission system equipment.	P, BKD OW	PC, OW SAT	PC, OW	PC, OW	PC, OW	PC, OW SAT BKD	P, OW SAT	P, OW SAT
<u>9. (Radial)</u> The operator of a transmission facility operating only radial transmission system equipment.	P, BKD OW	PC, OW SAT	PC, OW	PC, OW	PC, OW SAT BKD	PC, OW SAT BKD	P	P, OW SAT
<u>10. (DFO)</u> The operator of an electric distribution system, except those who contributes load additions for black start capability process requirements.					P, OW SAT	P	P	P
<u>11. (DFO blackstart)</u> The operator of an electric distribution system who contributes load additions for black start capability process requirements.					P, OW SAT	P	P	

- As per 4(1) the defined primary and one of the backup options, if specified, is required.
- As per 5(4)(5)(6) the requirements apply to adjacent and directly connection market participants.

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Legend	<u>Primary Voice Communication</u>
<u>PC</u>	A commercial service with a primary direct access telephone connection from the control room, with the telephone having mute and conference call capabilities.
<u>P</u>	A commercial service with primary direct access telephone connection from the control room.
	<u>Emergency and Backup Voice Communication</u>
<u>OW</u>	A utility orderwire service from the control room.
<u>SAT</u>	A satellite network telephone service from the control room.
<u>BKD</u>	A backup direct access telephone connection from the control room.