NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
Purpose To establish Interpersonal Communication capabilities necessary to maintain reliability.	**Purpose** The purpose of this **reliability standard** is to ensure the **ISO** and each **operator** of a **transmission facility** have adequate and reliable voice and message telecommunication facilities internally and with others for the exchange of **interconnection** and operating information necessary to maintain reliability.	**Purpose** The purpose of this **reliability standard** is to establish voice communication capabilities necessary to maintain the reliable operation of the **interconnected electric system**.	**Alberta Variance**[1] – The AESO added "the reliable operation of the interconnected electric system" to the purpose statement to indicate the fact that the purpose of this standard is to assist in ensuring the overall reliability of the interconnected electric system in Alberta and not just the bulk electric system in Alberta. **Reason for Difference**[2] – Modified sentence by adding "The purpose of this reliability standard is to" to align with AESO drafting standards. **Alberta Variance** – Changed "Interpersonal Communication capability" to "voice communication capability" here, and throughout the document, to specify that voice communication is needed to meet the AESO's mandate to direct the operation of the interconnected electric system in a safe, reliable, and economic manner. This applies to both primary and the backup communication capability. **Reason for Difference** – added "primary" to "voice communication capability" when referring to the main communication capability for added clarity throughout the document and to better align with AESO terminology.

[1] A "Reason for Difference" is a change from the US Reliability Standards to align with AESO terminology.
[2] An Alberta variance is a change from the US Reliability Standard that the AESO has determined is material.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
			Reason for Difference – Changed "alternative" to "backup" throughout the document to align with AESO drafting standards.
Applicability 4.1. Functional Entities: 4.1.1. Transmission Operator 4.1.2. Balancing Authority 4.1.3. Reliability Coordinator 4.1.4. Distribution Provider 4.1.5. Generator Operator	**Applicability** This **reliability standard** applies to the following: (a) the **operator** of a **transmission facility** that is: (i) part of the **bulk electric system**; or (ii) not part of the **bulk electric system** but which the **ISO**: (A) determines is necessary for the reliable operation of either the **interconnected electric system** or the City of Medicine Hat electric system; and (B) publishes on the AESO website and may amend from time to time in accordance with the process set out in Appendix 1; and (b) the **ISO**. **Section 502.4, Applicability** **1** Section 502.4 applies to: (a) the **legal owner** of a **generating unit**; (b) the **legal owner** of an **aggregated generating facility**; (c) the **legal owner** of a **transmission facility**; (d) the **legal owner** of an **electric distribution system**; (e) a **pool participant**; and	**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 part of the **bulk electric system**; (d) the **operator** of an **aggregated generating facility** that is part of the **bulk electric system**; 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.	**Reason for Difference** – In Alberta, the NERC functional entity types: Transmission Operator, Distribution Provider, and Generator Operator are referred to as an operator of a transmission facility, an operator of an electric distribution system, and an operator of a generating unit or operator of an aggregated generating facility, respectively. **Reason for Difference** – In the Alberta electricity industry structure, the AESO performs the functions of the NERC functional entities Balancing Authority and the Reliability Coordinator, and some of the functions of the Transmission Operator. **Alberta Variance** – The AESO applied this standard to each operator of a transmission facility rather than just to those that are part of the bulk electric system to help ensure the overall reliable operation of the interconnected electric system and not just the bulk electric system in Alberta. **Reason for Difference**: The AESO has applied this standard to generators that are part of the bulk electric system in alignment with NERC. NERC defines

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
	(f) the **ISO**.		Generator Operators as those that operate generators that meet the bulk electric system definition. In Alberta, the definition generating units and aggregated generating facility encompass sub-BES generators.
Effective Date: October 1, 2017 Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is 9 months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is 9 months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.	**Effective Date** 2015-05-01 **Section 502.4 Effective Date** 2015-03-27	**Effective Date** TBD (4 calendar quarters after AUC approval)	**Alberta Variance:** To align with the effective date of COM-002-AB-4, *Operating Personnel Communication Protocols* and to address stakeholder comments.
R1 Each Reliability Coordinator shall have Interpersonal Communication capability with the following entities (unless the Reliability Coordinator detects a failure of its Interpersonal Communication capability in which case Requirement R10 shall apply): *[Violation*	**R1** The **ISO** must, as necessary to maintain reliability, provide adequate, reliable, and, where applicable, diverse and redundant voice and message telecommunication facilities for the exchange of **interconnection** and internal Alberta operating information with the following: (a) each **operator** of a **transmission facility**;	**R1** The **ISO** shall have primary voice communication capability with the following entities, unless the **ISO** detects a failure of its primary voice communication capability, in which case requirement R10 shall apply: (a) each **operator** of a **transmission facility**;	**Alberta Variance**: Requirement R1 was expanded for the AESO to have primary voice communication capability with entities that are not included in the NERC requirement R1, including each adjacent interconnected transmission operator.in order for the AESO to meet its mandate to

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
Risk Factor: High] [Time Horizon: Real-time Operations] 1.1. All Transmission Operators and Balancing Authorities within its Reliability Coordinator Area. 1.2. Each adjacent Reliability Coordinator within the same Interconnection.	(b) each adjacent **interconnected transmission operator** directly connected to Alberta; (c) each adjacent **balancing authority** directly connected to Alberta; and (d) the adjacent **reliability coordinators**. **R4** The **ISO** must provide a means to coordinate voice and message telecommunications with each **operator** of a **transmission facility**, adjacent **interconnected transmission operator**, **adjacent balancing authority** and adjacent **reliability coordinators**, which coordination must include the ability to investigate and recommend solutions to voice and message telecommunications problems within Alberta. **Section 502.4, New and Existing Systems** **2(5)** The **ISO** must have…voice 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 502.4. **Subsection 502.4, Dedicated Primary Direct Access Telephone and Cell Phone Connections** **5(1)** If there is a requirement under this section 502.4 for one (1) or more primary direct access telephone connections to the **ISO** coordination centre from a **market participant** control room, then the connection must be dedicated for the exclusive use of the **ISO** and the **market participant**, and must not be degraded by any other communication or data transfer activities if there is any shared equipment or functionality associated with the connection. (2) Each primary direct access telephone connection must be dedicated to the specific applicable operational function in the **ISO**	(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 part of the **bulk electric system**; (d) each **operator** of an **aggregated generating facility** that is part of the **bulk electric system**; (e) each adjacent **reliability coordinator**; (f) each adjacent **interconnected transmission operator** directly connected to Alberta; and (g) each **adjacent balancing authority**.	ensure overall reliability of the interconnected electric system **Reason for Difference**: Added, to requirement R1, primary interpersonal communication requirement from NERC COM-001-3 requirement R5, which requires the balancing authority to have primary voice communication capability with each adjacent balancing authority because, in the Alberta electricity industry structure, the AESO performs the function of both the reliability coordinator and the balancing authority. Requirement R1 was therefore expanded for the AESO to have primary voice communication capability with entities that are not included in the NERC requirement R1, including each adjacent interconnected transmission operator, 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, each operator of a generating unit and each operator of an aggregated generating facility, that is part of the bulk electric system.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
	coordination centre.		
M1 Each Reliability Coordinator shall have and provide upon request evidence that it has Interpersonal Communication capability with all Transmission Operators and Balancing Authorities within its Reliability Coordinator Area and with each adjacent Reliability Coordinator within the same Interconnection, which could include, but is not limited to: • 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. (R1.)	**MR1** Evidence of providing voice and message telecommunication facilities as required in requirement R1 exists. Evidence may include: (a) a list identifying each telecommunication facility for the exchange of **interconnection** and Alberta operating information; and (b) documentation demonstrating the implementation of diverse routing and redundancy capability. **MR4** Evidence of providing a means to coordinate voice and message telecommunications as required in requirement R4 exists. Evidence may include a documented procedure in place which identifies a process for coordinating telecommunications and a process for investigating and recommending solutions to telecommunications problems.	**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.	
R2 Each Reliability Coordinator shall designate an Alternative Interpersonal Communication capability with the following entities: *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]* 2.1. All Transmission Operators and Balancing Authorities within its Reliability Coordinator Area. 2.2. Each adjacent Reliability Coordinator within the same Interconnection.	**No equivalent**	**R2** The **ISO** shall designate a backup voice communication capability in each control room 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 part of the **bulk electric system**, with each control room that is capable of operating more than 50 MW of generation based on the total **maximum authorized real power**;	**Reason for Difference:** added "in each control room" to clarify that backup voice communication system is required in all control rooms. **Alberta Variance**: Requirement R2 was expanded for the AESO to designate backup voice communication systems with entities that are not included in the NERC requirement R2, including each adjacent interconnected transmission operator, 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

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
		(d) each **operator** of an **aggregated generating facility** that is part of the **bulk electric system**; (e) each adjacent **reliability coordinator;** (f) each adjacent **interconnected transmission operator** directly connected to Alberta; and (g) each **adjacent balancing authority**.	each operator of a generating unit and each operator of an aggregated generating facility that is part of the bulk electric system part of the bulk electric system, with each operator control room that is capable of operating more than 50 MW of generation based on the total maximum authorized real power .in order to help ensure overall reliability of the interconnected electric system and not just the bulk electric system in Alberta. **Reason for Difference**: Added, to requirement R2, backup interpersonal communication requirements from NERC COM-001-3 requirement R6, which requires the balancing authority to have backup voice communication capability with each adjacent balancing authority because, in the Alberta electricity industry structure, the AESO performs the function of both the reliability coordinator and the balancing authority.
M2 Each Reliability Coordinator shall have and provide upon request evidence that it designated an Alternative Interpersonal Communication capability with all Transmission Operators and Balancing Authorities within its Reliability Coordinator Area and with each adjacent Reliability Coordinator within the same Interconnection, which could include, but is not limited to: • physical assets, or	**MR2** Evidence of providing voice and message telecommunication facilities as required in requirement R2 exists. Evidence may include: (a) a list identifying each telecommunication facility for the exchange of **interconnection** and Alberta operating information; and **(b)** documentation demonstrating the implementation of diverse routing and redundancy capability, if applicable.	**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.	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
• dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R2.)			
R3 Each Transmission Operator shall have Interpersonal Communication capability with the following entities (unless the Transmission Operator detects a failure of its Interpersonal Communication capability in which case Requirement R10 shall apply): *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]* 3.1. Its Reliability Coordinator. 3.2. Each Balancing Authority within its Transmission Operator Area. 3.3. Each Distribution Provider within its Transmission Operator Area. 3.4. Each Generator Operator within its Transmission Operator Area. 3.5. Each adjacent Transmission Operator synchronously connected. 3.6. Each adjacent Transmission Operator asynchronously connected.	**R2** Each **operator** of a **transmission facility** must, as necessary to maintain reliability, provide adequate, reliable, and, where applicable, diversely routed and redundant voice and message telecommunication facilities for the exchange of **interconnection** and Alberta operating information with the following: (a) each adjacent **operator** of a **transmission facility**; (b) each adjacent **interconnected transmission operator** that is directly connected to Alberta; and (c) the **ISO**. **R5** Each **operator** of a **transmission facility** must provide a means to coordinate voice and message telecommunications with the **ISO** and adjacent **interconnected transmission operators**, which coordination must include the ability to investigate and recommend solutions to voice and message telecommunications problems within Alberta. **Section 502.4, Specific Requirements** **7** The more specific systems requirements are as set out in the following Table 1: Table 1 Automated Dispatch and Messaging System and Voice Communication Systems Requirements ("Table 1"). Table 1 has 2 categories of legal owner of transmission facility (7 and 8).	**R3** Each **operator** of a **transmission facility** shall have primary voice communication capability 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** 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 part of the **bulk electric system** and is directly connected to its **transmission facility** ; (e) each **operator** of an **aggregated generating facility** that is part of the **bulk electric system** and is directly connected to its **transmission facility** and; and (f) each adjacent **interconnected transmission operator** directly connected to its **transmission facility**.	**Reason for Difference** – In the Alberta electricity industry structure, the AESO performs the functions of the Balancing Authority and the Reliability Coordinator, and some of the functions of the NERC Transmission Operator. Therefore, COM-001-AB-3 requirement R3 requires each operator of a transmission facility to have a backup with the AESO and not the Reliability Coordinator and Balancing Authority. .

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
	A. Market Participant **7. A.** A **legal owner** of a **transmission facility**, except those who operate only radial transmission system equipment. **B. Primary Requirement:** **1.** A commercial service with primary direct access telephone connection from the control room to the **ISO** coordination centre, with the service having mute and conference call capabilities. **A. Market Participant** **8.A.** A **legal owner** of a **transmission facility** operating only radial transmission system equipment. **B. Primary Requirement** **1.** A commercial service with primary direct access telephone connection from the control room to the **ISO** coordination centre.		
	Section 502.4, New and Existing Systems 2(4) A **market participant** in a subcategory identified in subsection 1 with a facility that has multiple control rooms must ensure that each control room is in compliance with the applicable…voice communication systems requirements of this section 502.4. *Also partially covered in requirement R7.A1 and R8.A1.* **Section 502.4 Dedicated Primary Direct Access Telephone and Cell Phone Connections** 5(1) If there is a requirement under this section 502.4 for one (1) or more primary direct access telephone connections to the **ISO** coordination centre from a **market participant** control room, then	**R3.A1**[3] Each **operator** of a **transmission facility** shall have 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.	**Alberta Variance:** This is an Alberta-specific requirement. To improve clarity, reduce overlap between requirements relating to the same subject matter and promote efficiency, the primary voice communication requirements currently included in Section 502.4 have been moved to COM-001-AB-3 to consolidate all voice communication requirements into one AESO authoritative document. The AESO has not included some of the existing Section 502.4 prescriptive requirements for primary voice communication systems to simplify and

[3] 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.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
	the connection must be dedicated for the exclusive use of the **ISO** and the market participant, and must not be degraded by any other communication or data transfer activities if there is any shared equipment or functionality associated with the connection. (3) Each primary direct access telephone number must be a primary number with automatic forwarding to another number if the primary number is busy or otherwise not available, and the use of voice mail is prohibited. (4) Cell phone service may be used as a primary direct access telephone connection if it satisfies the requirements of subsections 4 and 5. *Also partially covered in requirement R7.A1 and R8.A1.* **Section 502.4, Specific Requirements** **7** Table 1 (see requirement R3 row above for additional **legal owner** of **transmission facility** primary voice communication system requirements)		allow for more telecommunication technologies to be used by each operator of a transmission facility. Requirement R3.A1 partially replaces the requirements outlined in subsection 2(4), 5, and Table 1 of Section 502.4.
M3 Each Transmission Operator shall have and provide upon request evidence that it has Interpersonal Communication capability with its Reliability Coordinator, each Balancing Authority, Distribution Provider, and Generator Operator within its Transmission Operator Area, and each adjacent Transmission Operator asynchronously or synchronously connected, which could include, but is not limited to: • Physical assets, or • Dated evidence, such as, equipment specifications and installation	**MR2** Evidence of providing voice and message telecommunication facilities as required in requirement R2 exists. Evidence may include: (a) a list identifying each telecommunication facility for the exchange of **interconnection** and Alberta operating information; and (b) documentation demonstrating the implementation of diverse routing and redundancy capability, if applicable. **MR5** Evidence of providing a means to coordinate voice and message telecommunications as required in requirement R4 exists. Evidence may include a documented procedure in place which identifies a process for coordinating telecommunications and a process for investigating and recommending solutions to	**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 having a primary voice communication capability as required in requirement R3.A1 exists. Evidence may include voice communication system design or configuration documentation, physical	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communication. (R3.)	telecommunications problems.	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.	
R4 Each Transmission Operator shall designate an Alternative Interpersonal Communication capability with the following entities: *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]* 4.1. Its Reliability Coordinator. 4.2. Each Balancing Authority within its Transmission Operator Area. 4.3. Each adjacent Transmission Operator synchronously connected. 4.4. Each adjacent Transmission Operator asynchronously connected.	**Section 502.4** **Subsection 7, Table 1** (7B and 8B) transmission facility backup voice communication requirement provided in Table A below with proposed new COM-001-AB-3 Appendix 1	**R4** Each **operator** of a **transmission facility** shall 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 part of the **bulk electric system** and is directly connected to its **transmission facility**; (e) each **operator** of an **aggregated generating facility** that is part of the **bulk electric system** and is directly connected to its **transmission facility** and ; and	**Alberta Variance**: COM-001-AB-3 Requirement R4 was expanded. Each operator of a transmission facility is required to have backup voice communication capability with entities that are not included in the NERC requirement R4, including each operator of an electric distribution system that is directly connected to its transmission facility, each operator of generating unit and operator of an aggregated generating facility that is part of the bulk electric system and is directly connected to its transmission facility. This helps maintain the reliable operation of the interconnected electric system and ensure effective restoration in the event of a severe power system outage. This is also an expansion from existing Section 502.4 requirements. Currently, there is only specific requirements for the owner of a

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
		(f) each adjacent **interconnected transmission operator** that is directly connected to its **transmission facility**.	transmission facility to have a backup voice communication capability with the AESO.
	Section 502.4 Subsection 7, Table 1 (7B and 8B) transmission facility backup voice communication requirement provided in Table A below with proposed new COM-001-AB-3 Appendix 1	**R4.A1** Each **operator** of a **transmission facility** shall 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.	**Alberta Variance**: This is an Alberta-specific requirement. Requirement R4.A1 was added to ensure the type of backup voice communication capability being used by each operator of a transmission facility is reliable and compatible with other entities that it is required to maintain backup voice communication capability with. See the comparison of Section 502.4 Table 1 and Appendix 1 and Appendix 3 below for further information.
M4 Each Transmission Operator shall have and provide upon request evidence that it designated an Alternative Interpersonal Communication capability with its Reliability Coordinator, each Balancing Authority within its Transmission Operator Area, and each adjacent Transmission Operator asynchronously and synchronously connected, which could include, but is not limited to: • Physical assets, or • Dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of		**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	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
voice recordings, or electronic communications. (R4.)		recordings, or electronic communications or other equivalent evidence.	
R5 Each Balancing Authority shall have Interpersonal Communication capability with the following entities (unless the Balancing Authority detects a failure of its Interpersonal Communication capability in which case Requirement R10 shall apply): *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]* 5.1. Its Reliability Coordinator. 5.2. Each Transmission Operator that operates Facilities within its Balancing Authority Area. 5.3. Each Distribution Provider within its Balancing Authority Area. 5.4. Each Generator Operator that operates Facilities within its Balancing Authority Area. 5.5. Each Adjacent Balancing Authority.	No equivalent	**R5** Intentionally left blank.	See Requirement R1
M5 Each Balancing Authority shall have and provide upon request evidence that it has Interpersonal Communication capability with its Reliability Coordinator, each Transmission Operator and Generator Operator that operates Facilities within its Balancing Authority	No equivalent	**MR5** Intentionally left blank.	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
Area, each Distribution Provider within its Balancing Authority Area, and each adjacent Balancing Authority, which could include, but is not limited to: • 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. (R5.)			
R6 Each Balancing Authority shall designate an Alternative Interpersonal Communication capability with the following entities: *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]* 6.1. Its Reliability Coordinator. 6.2. Each Transmission Operator that operates Facilities within its Balancing Authority Area. 6.3. Each Adjacent Balancing Authority.	No equivalent	**R6** Intentionally left blank.	See Requirement R2
M6 Each Balancing Authority shall have and provide upon request evidence that it designated an Alternative Interpersonal Communication capability with its Reliability Coordinator, each Transmission Operator that operates Facilities within its Balancing Authority Area, and each adjacent Balancing Authority, which could include, but is not		**MR6** Intentionally left blank.	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
limited to: • 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. (R6.)			
R7 Each Distribution Provider shall have Interpersonal Communication capability with the following entities (unless the Distribution Provider detects a failure of its Interpersonal Communication capability in which case Requirement R11 shall apply): [Violation Risk Factor: Medium] [Time Horizon: Real-time Operations] 7.1. Its Balancing Authority. 7.2. Its Transmission Operator.	**Section 502.4, Specific Requirements** **7** The more specific systems requirements are as set out in the following Table 1: There are 2 categories of owners of electric distribution systems (9 and 10): **A. Market Participant** 9. A **legal owner** of an **electric distribution system**. **B. Primary Requirement:** 1. A commercial service with primary direct access telephone connection from the control room to the **ISO** coordination centre. **A. Market Participant** 10. A **legal owner** of an **electric distribution system** who contributes load additions for **black start capability** process requirements. **B. Primary Requirement:** 1. A commercial service with primary direct access telephone connection from the control room to the **ISO** coordination centre.	**R7** Each **operator** of an **electric distribution system** shall have primary voice communication capability 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) its **operator** of a **transmission facility**.	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
	Section 502.4, New and Existing Systems *2(4) provided above in R3.A1, partially covered by this requirement R7.A1, and by requirement R8.A1 below.* **Section 502.4 Dedicated Primary Direct Access Telephone and Cell Phone Connections** 5(1), (3), and (4) *provided above in R3.A1, partially covered by this requirement R7.A1, and by requirement R8.A1 below.* **Section 502.4, Specific Requirements** 7 Table 1 (see requirement R7 row above for additional legal owner of electric distribution system primary voice communication system requirements)	**R7.A1** Each **operator** of an **electric distribution system** shall have 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.	**Alberta Variance:** This is an Alberta-specific requirement. To improve clarity, the primary voice communication requirements currently included in Section 502.4 of the ISO rules have been moved to COM-001-AB-3 to consolidate all voice communication requirements into one AESO authoritative document. The AESO has not included some of the existing Section 502.4 prescriptive requirements for primary voice communication capability to simplify and allow for more telecommunication technologies to be used by each operator of an electric distribution system. Requirement R7.A1 partially replaces the requirements outlined in subsection 2(4), 5, and Table 1 of Section 502.4.
	Section 502.4 Subsection 7, Table 1 (9B and 10B) electric distribution system backup voice communication requirement provided in Table A and Table B below with proposed new COM-001-AB-3 Appendix 1 and 2, respectively.	**R7.A2** Each **operator** of an **electric distribution system** shall 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 its **operator** of a **transmission facility**.	**Alberta Variance:** This is an Alberta-specific requirement. Requirement R7.A2 was added to ensure the type of backup voice communication capability being used by each operator of an electric distribution system is compatible with other entities that it is required to have backup voice communications capability with. See the comparison of Section 502.4 Table 1 and Appendix 1 and Appendix 3 below for further information.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* (“Section 502.4”)	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
M7 Each Distribution Provider shall have and provide upon request evidence that it has Interpersonal Communication capability with its Transmission Operator and its Balancing Authority, which could include, but is not limited to: • 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. (R7.)		**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 having a primary voice communication capability as required in requirement R7.A1 exists. Evidence may include voice communication system design or configuration documentation, 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.	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
R8 Each Generator Operator shall have Interpersonal Communication capability with the following entities (unless the Generator Operator detects a failure of its Interpersonal Communication capability in which case Requirement R11 shall apply): *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]* 8.1. Its Balancing Authority. 8.2. Its Transmission Operator.	**Section 502.4, Specific Requirements** **7** The more specific systems requirements are as set out in the following Table 1: Table 1 has 4 categories of **legal owners** of **generating units** and **aggregated generating facilities (3, 4, 5, and 6):** **A. Market Participant** 3. A **legal owner** of a **generating unit** or **aggregated generating facilities** connecting to the **interconnected electric system** at a voltage of less than or equal to 25kV. and 4. A **legal owner** of a **generating unit** or **aggregated generating facilities** connecting to the **interconnected electric system** at a voltage of greater than 25kV where the aggregated electric energy output at the point of connection is less than 50 MW. **B. Primary Requirement:** 1. A commercial service with a primary direct access telephone connection from the control room to the **ISO** coordination centre. **A. Market Participant** 5. A **legal owner** of a **generating unit** or **aggregated generating facilities** connecting to the **interconnected electric system** at a voltage of greater than 25 kV where the aggregated electric energy output at the point of connection is equal to or greater than 50 MW. 6. A **legal owner** of a **generating unit** providing a **black start capability** service **B. Primary Requirement** 1. A commercial service with a primary direct access telephone connection from the control room to the **ISO** coordination centre,	**R8** Each **operator** of a **generating unit** and **operator** of an **aggregated generating facility** shall have primary voice communication capability 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) its **operator** of a **transmission facility**.	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
	with the service having mute and conference call capabilities.		
	Section 502.4, New and Existing Systems *2(4) provided above in R3.A1, partially covered by this requirement R8.A1, and by requirement R7.A1 above.* **Section 502.4 Dedicated Primary Direct Access Telephone and Cell Phone Connections** 5(1), (3), and (4) *provided above in R3.A1, partially covered by this requirement R8.A1, and by requirement R7.A1 below.* **Section 502.4, Specific Requirements** 7 Table 1 (see requirement R8 row above for additional **legal owner** of **electric distribution system** primary voice communication system requirements)	**R8.A1** Each **operator** of a **generating unit** and **operator** of an **aggregated generating facility** shall have 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.	**Alberta Variance:** This is an Alberta-specific requirement. To improve clarity the primary voice communication requirements currently included in Section 502.4 have been moved to COM-001-AB-3 to consolidate all voice communication requirements into one AESO authoritative document. The AESO has not included some of the existing Section 502.4 prescriptive requirements for primary voice communication systems to simplify and allow for more telecommunication technologies to be used by each operator of a generating unit or an aggregated generating facility. Requirement R8.A1 partially replaces the requirements outlined in subsection 2(4), 5, and Table 1 of Section 502.4.
	Section 502.4 **Subsection 7, Table 1** (3B, 4B, 5B, and 6B) **generating unit** or **aggregated generating facilities** backup voice communication requirement provided in Table A and Table B below with proposed new COM-001-AB-3 Appendix 1 and 2, respectively.	**R8.A2** Each **operator** of a **generating unit** and **operator** of an **aggregated generating facility** shall 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 its **operator** of a **transmission facility**.	**Alberta Variance:** This is an Alberta-specific requirement. Requirement R8.A2 was added to ensure the type of backup voice communication capability being used by each operator of a generating unit and operator of an aggregated generating facility is compatible with other entities it is required to have backup voice communications with. See the comparison of Section 502.4 Table 1 and Appendix 1 and Appendix 3 below for further information.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* (“Section 502.4”)	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
M8 Each Generator Operator shall have and provide upon request evidence that it has Interpersonal Communication capability with its Balancing Authority and its Transmission Operator, which could include, but is not limited to: • 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. (R8.)		**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 having primary voice communication capability as required in requirement R8.A1 exists. Evidence may include voice communication system design or configuration documentation, 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.	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
R9 Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall test its Alternative Interpersonal Communication capability at least once each calendar month. If the test is unsuccessful, the responsible entity shall initiate action to repair or designate a replacement Alternative Interpersonal Communication capability within 2 hours. *[Violation Risk Factor: Medium][Time Horizon: Real-time Operations, Same-day Operations]*	**R3** The **ISO** and each **operator** of a **transmission facility** must manage and test its alternate voice and message telecommunication facilities. **Section 502.4** **Testing of Emergency and Back Up Communication Systems** **9**(1) The **ISO** must conduct tests for all emergency and back up communication systems on a reasonable basis and the testing schedule time and date must be made known reasonably in advance to the operator of a market participant whose system will be tested. (2) If the test is a success then the **ISO** will not notify the **operator**, but if the test is a failure then the **ISO** will verbally notify the **operator** of the failure no later than twenty four (24) hours after the test in completed. (3) After the **ISO** notifies the **operator** of the testing schedule, the operator must ensure that there are trained personnel available to conduct and facilitate the test at the designated date and time. (4) In accordance with the confidentiality provisions of subsection 2(1) of section 103.1 of the **ISO rules** *Confidentiality,* the **ISO** must keep confidential the name of any facility that is subject to testing, and the date and time of the tests. (5) If there is a failure of a test, then the applicable market participant or the **ISO**, depending on whose emergency and back up communication system has failed, must ensure the cause is investigated and repaired as soon as reasonably possible, but in any event the system must be repaired no later than five (5) **business days** after: (a) the date of the test failure, in the case of the **ISO**; or (b) the date of delivery of notice of the test failure, in the case of the **market participant**.	**R9** Each Responsible Entity shall test its 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 shall initiate action to repair or designate a temporary replacement backup voice communication capability within 2 hours of the unsuccessful test.	**Alberta Variance**: Requirement R9, which addresses testing of backup voice communication capability, has been expanded to include a testing requirement for all entities that are required to have backup voice communication capability. This results in each applicable operator of an electric distribution system, operator of a generating unit, and operator of an appgreated generating facility, as set out in requirements R7.A2, and R8.A2, being added to requirement R9. The requirement more closely aligns to NERC requirement R9 than the existing backup voice communication system testing requirements set out in subsection 9 of Section 502.4. However, the AESO will still notify the operator in the manner outlined in subsections 9(2) and 9(3) of Section 502.4 and will maintain confidentiality in accordance with subsection 2(1) of Section 103.1 of the ISO rules, *Confidentiality*.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
	(6) The **ISO** must keep a copy of any test results for no less than two (2) calendar years after the date of the test.		
M9 Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall have and provide upon request evidence that it tested, at least once each calendar month, its Alternative Interpersonal Communication capability designated in Requirements R2, R4, or R6. If the test was unsuccessful, the entity shall have and provide upon request evidence that it initiated action to repair or designated a replacement Alternative Interpersonal Communication capability within 2 hours. Evidence could include, but is not limited to: dated and time-stamped test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R9.)	**MR3** Evidence of managing and testing its alternate voice and message telecommunication facilities as required in requirement R3 exists. Evidence may include: (a) a list identifying each telecommunication facility as determined to be alternate; (b) documented procedures describing how to manage and test its alternate telecommunication facilities; and records of testing.	**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 designate 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.	
R10 Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall notify entities as identified in Requirements R1, R3, and R5, respectively within 60 minutes of the detection of a failure of its Interpersonal Communication capability that lasts 30 minutes or longer. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*	No equivalent	**R10** The **ISO** and each **operator** of a **transmission facility** shall 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.	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
M10. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall have and provide upon request evidence that it notified entities as identified in Requirements R1, R3, and R5, respectively within 60 minutes of the detection of a failure of its Interpersonal Communication capability that lasted 30 minutes or longer. Evidence could include, but is not limited to: dated and time-stamped test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R10.)	No equivalent	**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.	
R11 Each Distribution Provider and Generator Operator that detects a failure of its Interpersonal Communication capability shall consult each entity affected by the failure, as identified in Requirement R7 for a Distribution Provider or Requirement R8 for a Generator Operator, to determine a mutually agreeable action for the restoration of its Interpersonal Communication capability. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*	No equivalent	**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 shall consult 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.	

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
M11 Each Distribution Provider and Generator Operator that detected a failure of its Interpersonal Communication capability shall have and provide upon request evidence that it consulted with each entity affected by the failure, as identified in Requirement R7 for a Distribution Provider or Requirement R8 for a Generator Operator, to determine mutually agreeable action to restore the Interpersonal Communication capability. Evidence could include, but is not limited to: dated operator logs, voice recordings, transcripts of voice recordings, or electronic communications.	No equivalent	**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.	
R12 Each Reliability Coordinator, Transmission Operator, Generator Operator, and Balancing Authority shall have internal Interpersonal Communication capabilities for the exchange of information necessary for the Reliable Operation of the BES. This includes communication capabilities between Control Centers within the same functional entity, and/or between a Control Center and field personnel. *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*	No equivalent	**R12** The **ISO** and each **operator** of a **transmission facility**, **operator** of a **generating unit**, and **operator** of an **aggregated generating facility** shall have internal voice communication capabilities for the exchange of information necessary for the reliable operation of the **interconnected electric system**. This includes voice communication capabilities between control rooms within the same functional entity, and/or between a control room and field personnel.	**Alberta Variance:** Replaced "Control Center" with "control room" to ensure each control room that is used to control and monitor the interconnected electric system, applicable generating units, and applicable aggregated generating facilities, are captured by this requirement, not just control rooms within control centres. It is assumed that each control centre has a control room.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
M12. Each Reliability Coordinator, Transmission Operator, Generator Operator, and Balancing Authority shall have and provide upon request evidence that it has internal Interpersonal Communication capability, which could include, but is not limited to: • 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.	No equivalent	**MR12** Evidence of having internal 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.	
R13 Each Distribution Provider shall have internal Interpersonal Communication capabilities for the exchange of information necessary for the Reliable Operation of the BES. This includes communication capabilities between control centers within the same functional entity, and/or between a control center and field personnel. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*	No equivalent	**R13** Each **operator** of an **electric distribution system** shall have internal voice communication capabilities for the exchange of information necessary for the reliable operation of the **interconnected electric system**. This includes internal communication capabilities between control rooms within the same functional entity, and/or between a control room and field personnel.	**Alberta Variance:** Replaced "control center" with "control room" to ensure each control room that control and monitor an electric distribution system are captured by this requirement.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* (“Section 502.4”)	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
M13 Each Distribution Provider shall have and provide upon request evidence that it has internal Interpersonal Communication capability, which could include, but is not limited to: • 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.	No equivalent	**MR13** Evidence of having internal 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.	
	Subsection 502.4, Mobile Satellite Telephone Service 6(1) If there is a requirement under this section 502.4 for mobile satellite network telephone service to the **ISO** from a **market participant**, then the service must be commercially available for one-to-one communications with the **ISO**. (2) If there is a requirement for such service to be available for dispatch purposes, then the service must allow for multiple party communications, including those between the **ISO** and the **market participant**.	**R14.A1** Each Responsible Entity shall, where its backup voice communication capability is a satellite telephone service, use a satellite network system, that is approved by the **ISO**.	**Alberta Variance**: This is an Alberta-specific requirement. Requirement R14.A1 was added to ensure the type of satellite network system being used by each Responsible Entity is compatible and effective with other entities they have a backup satellite network system with. This is a modified version of what is in the currently required in subsection 6 of Section 502.4.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4")	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
		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.	
	No equivalent	**R15.A1** Each Responsible Entity shall, where its backup voice communication capability is a satellite telephone service or utility orderwire service,[4] have sufficient backup power supply to ensure that its backup voice communication capability, in its control room site, is capable of remaining operational for a minimum of 8 hours in the event of an extended power outage of its main power supply for its backup voice communication capability.	**Alberta Variance:** This is an Alberta-specific requirement. Requirement R15.A1 was added to ensure, when satellite telephone service or utility orderwire service is used to provide backup voice communication capability, that it meets minimum performance criteria in the event of an extended power outage, in order to help maintain the reliable operation of the interconnected electric system and ensure effective restoration in the event of a severe power system outage. A minimum of 8 hours was selected to align with the standard practice in Alberta for substations battery backup systems.

[4] "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.

NERC COM-001-3	Current Alberta COM-001-AB1-1.1, *Telecommunications* and, where indicated, Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* (“Section 502.4”)	Proposed New Alberta COM-001-AB-3, *Communications*	AESO Reason for Differences or Alberta Variance to NERC COM-001-3
		MR15.A1 Evidence of having sufficient backup power supply that ensures its backup voice communication capability in its control room site is capable of remaining operational in the event of an extended power outage of its main power supply for its backup voice communication capability as required in requirement R15.A1 exists. Evidence may include backup power supply size and load calculations, and, if an extended power outage occurred, dated and time-stamped records of operations during the extended power outage, such as, **operator** logs, voice recordings, transcripts of voice recordings, or electronic communications or other equivalent evidence.	

Table A: Comparison of Section 502.4, Table 1, Columns A and C & Proposed New COM-001-AB-3, Appendix 1, *Responsible Entity Requirements for Each Backup Voice Communication Capability with the ISO*

Section 502.4, subsection 7, Table 1, *Automated Dispatch and Messaging System and Voice Communication Systems Requirements*		**COM-001-AB-3, Appendix 1, *Responsible Entity Requirements for Each Backup Voice Communication Capability with the ISO***			**AESO Reason for Differences or Alberta Variance**
A. Market Participant Subcategory	**C. Emergency and Backup Requirements**	**Responsible Entity Category**	**Responsible Entity subcategory**	**Responsible Entity Backup Voice Communication Capability Options for Communicating with the ISO**	
7. A **legal owner** of a **transmission facility**, except those who operate only radial **transmission system** equipment.	One of the following additional services connecting from the control room to the **ISO** coordination centre: 1. A mobile satellite network telephone service; 2. A back up direct access telephone connection; or 3. A utility orderwire service.	1. Each **operator** of a **transmission facility**	(a) that operates any **transmission facility** unless it meets the criteria specified in subcategory 1(b).	(1) Utility orderwire service	**Alberta Variance:** Establishing a set of specific backup voice communication capability options for Responsible Entities is necessary to ensure Responsible Entities are using effective and compatible backup voice capability to help maintain the reliable operation of the interconnected electric system and ensure effective restoration in the event of a severe power system outage. Alberta differs from other jurisdictions for the following reasons: commercial telecom systems cover a large geographical area (large telecom systems); there are many different parties involved (several operators of transmission facilities, several operators of electric distribution systems, and many operators of generating units and operators of aggregated generating facilities); the economy heavily depends on electricity (restoration delay has significant impact); there is one effective intertie (to BC) for restoration (generators are more critical); the cold weather climate
			(b) that only operates a **radial circuit** at the control room or only operates a t**ransmission facility** identified in a list the **ISO** publishes on the AESO website.	None required.	
8. A **legal owner** of a **transmission facility** operating only radial **transmission system** equipment.	1. A back up direct access telephone connection from the control room to the **ISO** coordination centre.				
9. A **legal owner** of an **electric distribution system**.	None required.	2. Each **operator** of an **electric distribution system**		(1) Utility orderwire service; (2) Satellite telephone service; or (3) Direct access telephone service.	
10. A **legal owner** of an **electric distribution system** who contributes load additions for **black start capability** process requirements.	One of the following additional services connecting from the control room: 1. A direct access telephone connection to the **legal owner** of the **transmission facility** providing the **transmission system** connection associated				

	with the **black start capability service**. 2. A mobile satellite network telephone service to the **ISO** coordination centre; or 3. A utility orderwire service to the **ISO** coordination centre.				(restoration delays impact personal safety); and there is an existing utility telecommunication network that can be leveraged to ensure effective and reliable telecommunications with critical facilities during normal system operations and in the event of a severe power system outage. Control rooms that operate more than 300 MW of synchronous generation and blackstart resources are critical during restoration events, as well as control rooms that operate a transmission facility, unless it only operates a radial circuit. As a result, utility orderwire service is the only option available for these control rooms. Utility orderwire service is: quick and effective dialing with dial tone; has support for multiple lines and handsets; has clear voice quality with no latency; has known extended power capabilities and system alarming; and specifically designed for power system operation. Satellite telephone service and commercial phones with enhanced performance are the most common backup systems: Satellite telephone service is preferred over commercial phones because they rely on completely independent infrastructure. As a
3. A **legal owner** of a **generating unit** or **aggregated generating facilities** connecting to the **interconnected electric system** at a voltage of less than or equal to 25kV.	None required.	3. 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			
4. A **legal owner** of a **generating unit** or **aggregated generating facilities** connecting to the **interconnected electric system** at a voltage of greater than 25kV where the aggregated electric energy output at the point of connection is less than 50 MW.	A back up direct access telephone connection from the control room to the **ISO** coordination centre.		(a) less than 50 MW based on the total amount of generation operated at the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	None required.	
5. A **legal owner** of a **generating unit** or **aggregated generating facilities** connecting to the **interconnected electric system** at a voltage of greater than 25 kV where the aggregated electric energy output at the point of connection is equal to or greater than 50 MW.	One of the following additional services connecting from the control room: 1. A direct access telephone connection to the control room of the **legal owner** of the **transmission facility** providing the **interconnected electric system** connection; 2. A mobile satellite telephone service to the **ISO** coordination centre; 3. A back up direct access telephone connection to the **ISO** coordination centre; or 4. A utility orderwire service to the **ISO** coordination centre.		(b) equal to or greater than 50 MW and less than 300 MW based on the total amount of generation operated at the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	(1) Utility orderwire service; or (2) Satellite telephone service.	
			(c) equal to or greater than 300 MW based on the total amount of generation operated at 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.	
6. A **legal owner** of a **generating unit** providing a	One of the following additional services connecting from the control room:		(d) equal to or greater than 300 MW based on the total amount	(1) Utility orderwire service	

black start capability service	1. A direct access telephone connection from the control room to the operations room of the **legal owner** of the **transmission facility** providing the **interconnected electric system** connection; 2. A back up direct access dedicated commercial telephone connection from the control room to the **ISO** coordination centre; or 3. A utility orderwire service from the control room to the **ISO** coordination centre.		of synchronous generation operated at the control room or a **blackstart resource**.		result, these are preferred for generation control rooms that control greater than or equal to 50 MW and less than 300 MW of generation. Backup voice communication systems are needed for control rooms that are able to operate 50 MW of generation because it is these control room communication channels that may be relied on during a restoration event. (this rationale is applicable to Appendix 2)

Table B: Comparison of Section 502.4, Table 1, Columns A and C & Proposed New COM-001-AB-3, 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

Section 502.4, subsection 7, Table 1, *Automated Dispatch and Messaging System and Voice Communication Systems Requirements*		**COM-001-AB-3, 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***			
A. Market Participant Subcategory	**C. Emergency and Backup Requirements**	**Responsible Entity**	**Adjacent and Directly Connected Entity Category**	**Adjacent and Directly Connected Entity Subcategory**	**Operator of a Transmission Facility Backup Voice Communication Capability Options for Communicating with Each Adjacent and Directly Connected Entity**
No equivalent requirement	No equivalent	**Operator** of a **transmission facility** unless the only **transmission facility** operated at the control room is a **radial circuit** or is a **transmission facility** identified in a list the **ISO** publishes on the AESO website	1. Each adjacent **operator** of a **transmission facility** that is directly connected to its **transmission facility**	(a) that operates any **transmission facility** unless it meets the criteria specified in subcategory 1(b).	(1) Utility orderwire service
				(b) that only operates a **radial circuit** or operates a **transmission facility** identified in a list the **ISO** publishes on the AESO website.	(1) Utility orderwire service; (2) Satellite telephone service; or (3) Direct access telephone service.
			2. Each **operator** of an **electric distribution system** that it is directly connected to its **transmission facility**		(1) Utility orderwire service; or (2) Satellite telephone service
			3. Each **operator** of a **generating unit** or **aggregated generating facility** that is directly connected to its **transmission facility** where the **maximum authorized real power** is:	(a) less than 50 MW based on the total amount of generation operated at the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**;	None required.
				(b) equal to or greater than 50 MW and less than 300 MW based on the total amount of generation operated at the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**;	(1) Utility orderwire service; or (2) Satellite telephone service.
				(c) equal to or greater than 300 MW based on the total amount of generation operated at 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.
				(d) equal to or greater than 300 MW based on the total amount of synchronous generation operated at the control room or a **blackstart resource**.	(1) Utility orderwire service

			4. Each adjacent **interconnected transmission operator** that is directly connected to its **transmission facility**		(1) Utility orderwire service; or (2) Satellite telephone service.
		Operator of a **transmission facility where** the **transmission facility** operated at the control room is a **radial circuit** or is a **transmission facility** identified in a list the **ISO** publishes on the AESO website.	1. Each adjacent **operator** of a **transmission facility** that is directly connected to its **transmission facility**	(a) that operates any **transmission facility** unless it meets the criteria specified in subcategory 1(b)	(1) Utility orderwire service (2) Satellite telephone service; or (3) Direct access telephone service
				(b) that only operates a **radial circuit** or only operates a **transmission facility** identified in a list the **ISO** publishes on the AESO website.	(1) Utility orderwire service; (2) Satellite telephone service; or (3) Direct access telephone service.
			2. 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) Direct access telephone service.
			3. 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:	(a) less than 50 MW based on the total amount of generation operated at the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**;	None required.
				(b) equal to or greater than 50 MW and less than 300 MW based on the total amount of generation operated at the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**;	(1) Utility orderwire service; or (2) Satellite telephone service.
				(c) equal to or greater than 300 MW based on the total amount of generation operated at 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.
				(d) equal to or greater than 300 MW based on the total amount of synchronous generation operated at the control room or a **blackstart resource**.	(1) Utility orderwire service
			4. Each adjacent **interconnected transmission operator** that is directly connected to its **transmission facility**		(1) Utility orderwire service; or (2) Satellite telephone service.

Table C: Comparison of Section 502.4, Table 1, Columns A and C & Proposed New COM-001-AB-3, 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 Its Operator of Transmission Facility *

Section 502.4, subsection 7, Table 1, *Automated Dispatch and Messaging System and Voice Communication Systems Requirements*		**COM-001-AB-3, Appendix 3, *Operator of an Electric Distribution System, Operator of a Generating Unit, and Operator of an Aggregated Generating Facility Requirements for its Backup Voice Communication Capability with Its Operator of Transmission Facility***			**AESO Reason for Differences or Alberta Variance**
A. Market Participant Subcategory	**C. Emergency and Backup Requirements**	**Responsible Entity Category**	**Responsible Entity Subcategory**	**Responsible Entity Backup Voice Communication Capability Options for Communicating with Its Operator of a Transmission Facility**	
9. A **legal owner** of an **electric distribution system**.	None required.	1. Each **operator** of an **electric distribution system**		(1) Utility orderwire service; (2) Satellite telephone service; or (3) An **operator** of **electric distribution system** may use direct access telephone service provided it is connected to a **radial circuit** or it is connected to a **transmission facility** identified in a list the **ISO** publishes on the AESO website**.**	**Alberta Variance:** For the same reasons as provided in Appendix 1, backup voice communication capability options are specified to ensure effective and reliable telecommunications between critical facilities during normal system operations and in the event of a severe power system outage.
10. A **legal owner** of an **electric distribution system** who contributes load additions for **black start capability** process requirements.	One of the following additional services connecting from the control room: 1. A direct access telephone connection to the **legal owner** of the **transmission facility** providing the **transmission system** connection associated with the **black start capability service**. 2. A mobile satellite network telephone service to the **ISO** coordination centre; or. 3. A utility orderwire service to the **ISO** coordination centre.				
3. A **legal owner** of a **generating unit** or **aggregated generating facilities** connecting to the **interconnected electric system** at a voltage of less than or equal to 25kV.	None required.				

4. A **legal owner** of a **generating unit** or **aggregated generating facilities** connecting to the **interconnected electric system** at a voltage of greater than 25kV where the aggregated electric energy output at the point of connection is less than 50 MW.	A back up direct access telephone connection from the control room to the **ISO** coordination centre.	2. Each **operator** of a **generating unit** and each **operator** of an **aggregated generating facility** where the **maximum authorized real power** is:	(a) less than 50 MW based on the total amount of generation operated at the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	None required.	
5. A **legal owner** of a **generating unit** or **aggregated generating facilities** connecting to the **interconnected electric system** at a voltage of greater than 25 kV where the aggregated electric energy output at the point of connection is equal to or greater than 50 MW.	One of the following additional services connecting from the control room: 1. A direct access telephone connection to the control room of the **legal owner** of the **transmission facility** providing the **interconnected electric system** connection; 2. A mobile satellite telephone service to the **ISO** coordination centre; 3. A back up direct access telephone connection to the **ISO** coordination centre; or 4. A utility orderwire service to the **ISO** coordination centre.		(b) equal to or greater than 50 MW and less than 300 MW based on the total amount of generation operated at the control room, unless the **generating unit** or **aggregated generating facility** is a **blackstart resource**.	(1) Utility orderwire service; or (2) Satellite telephone service.	
			(c) equal to or greater than 300 MW based on the total amount of generation operated at 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.	
6. A **legal owner** of a **generating unit** providing a **black start capability service**	One of the following additional services connecting from the control room: 1. A direct access telephone connection from the control room to the operations room of the **legal owner** of the **transmission facility**		(d) equal to or greater than 300 MW based on the total amount of synchronous generation operated at the control room or is a **blackstart resource**.	(1) Utility orderwire service	

	providing the **interconnected electric system** connection; 2. A back up direct access dedicated commercial telephone connection from the control room to the **ISO** coordination centre; or 3. A utility orderwire service from the control room to the **ISO** coordination centre.				

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

Table D: Existing COM-001-AB-1.1 requirements that were modified and moved to a different authoritative document and rationale

Requirement	Modified and Moved to
R6 The **ISO** and each **operator** of a **transmission facility** must use the English language for all communications between their respective operating personnel responsible for the real-time generation control and operation of the **interconnected electric system**. **MR6** Evidence of using the English language as required in requirement R6 exists. Evidence may include **operator** logs, voice recordings, electronic communications or **e-tag** records.	**Proposed COM-002-AB-4 in alignment with NERC COM-002-AB-4.** R1 The **ISO** and the **operator** of a **transmission facility** shall develop documented communication protocols for its operating personnel that issue or receive operating instructions, including **directives**. The protocol shall, at a minimum: R1.1 require its operating personnel that issue or receives an oral or written operating instruction to use the English language; MR1 Evidence of having developed documented communication protocols for operating personnel that issue or receive operating instructions, including **directives** as required in requirement R1 exists. Evidence may include documented communication protocols or other equivalent evidence.
R7 The **ISO** and each **operator** of a **transmission facility** must have written operating instructions and procedures to enable continued operation of the **interconnected electric system** during the loss of voice and message telecommunications facilities. **MR7** Evidence of having written operating instructions and procedures as required in requirement R7 exists. Evidence may include electronic or hard copy of the operating instructions and procedures.	This was requirement R5 in NERC COM-001-1 and retired in NERC COM-001-2. NERC stated, “The RC SDT proposes retiring COM-001-1.1, Requirement R5 as it is redundant with EOP-008-0, Requirement R1…”

Table E: Section 502.4 voice communication requirements that are not moving to COM-001 or are being retired and rationale for retirement

Section 502.4 Subsection	Rationale
1 Section 502.4 applies to:… **(c)** a **pool participant** **Related subsection 7 Table 1, rows 1 to 2 (**1. A **pool participant** who may receive an energy market **dispatch** or a **directive**; 2. A **pool participant** who may receive an **ancillary service dispatch** or a **directive.**)	The requirements regarding pool participant communication with the AESO remain in Section 502.4, however the requirements have been modified. Please see proposed amended Section 502.4 for further information.
New and Existing Systems **2(1)** On and after June 1, 2011, a **market participant** with any new facility which is to be directly connected to the **interconnected electric system** must comply with the applicable minimum ….voice communication systems requirements of this section 502.4. **2(2)** Subject to subsection 2(3), the provisions of this section 502.4 do not apply to any…voice communication systems in existence as of June 1, 2011, but those systems must remain in compliance with the technical specifications and operational requirements which were in effect as of the original date of the commencement of the systems' operation, including those in Appendix 1. **(3)** The **ISO** may require a **market participant** to comply with any specific or all of the…voice communication systems requirements of this section 502.4, if the **ISO** determines that such compliance is critical for the safe and reliable operation of the **interconnected electric system.**	Retired. Subsection 2(1) and 2(2) relate to legacy treatment. Responsible Entities that operate existing facilities, or have plans to operate a new facilities, and would like to request a waiver or variance to any proposed new COM-001-AB-3 requirement can submit a request pursuant to reliability standard ADM-002-AB-1, *Waivers and Variances.* Retired. Subsection 2(3) is unnecessary as the AESO does not see a need for voice communication, above and beyond what is prescribed in proposed new COM-001-AB-3.
Successor to Prior Requirements **3** Subject to subsection 2, this section 502.4 succeeds the *Operational Voice Communications Standard* in effect as of September 7, 2005, and the prior standard or any drafts of it no longer will be in force and effect as of June 1, 2011.	Retired. Subsection 3 is no longer needed. Section 502.4 has been in effect for 10 years.
4(1) All…and voice communication systems under this section 502.4 must be continuously operational twenty four (24) hours a day, seven (7) days a week. **(2)** Those systems must be maintained and serviced generally in accordance with **good electric industry practice** to ensure they are continuously operational.	The intent remains in Section 502.4; however, it has been modified to clarify that **pool participants** must be available 24/7 to respond to dispatches or directives, and related phone calls from the AESO.
8 Each applicable **market participant** and the **ISO** must use the specified [in Table 1] emergency and back up communication systems when there is an event that causes a primary communication system to be materially disrupted or impaired, including an event such as: **(a)** a real time system emergency condition, as may be referenced in any reliability standard; or **(b)** a disturbance or interruption of service by any provider of a primary communications system service.	Retired. It is not necessary to explicitly specify when emergency and backup communication systems should be used.

Loss of Emergency and Back Up Communication Systems 10(1) If either the **ISO** or a **market participant** experiences a material disruption or complete loss of any emergency and back up communication systems at a point in time other than during a test period, then verbal notice must be given by: (a) the **ISO** to all affected **market participants**, if the **ISO** suffers the disruption of loss; or (b) the applicable **market participant** to the **ISO**, if the **market participant** suffers the disruption or loss. (2) The **market participant** that experiences the disruption or loss must investigate and repair it as soon as reasonably possible, but in any event no later than five (5) business days after the date of the discovery of the cause of the disruption or loss.	Retired. The AESO is of the view that this requirement is not needed. Failure of a backup voice communication system is typically observed during testing. Therefore, requirement R9 of COM-001-AB-3 is sufficient.