

Information Documents are not authoritative. Information Documents are for information purposes only and are intended to provide guidance. In the event of any discrepancy between an Information Document and any Authoritative Document(s)¹ in effect, the Authoritative Document(s) governs.

1 Purpose

This Information Document relates to the following Authoritative Document:

- Section 502.17 of the ISO rules, *Voice Communications*.

The purpose of this Information Document is to provide clarity to Section 502.17 of the ISO rules, *Voice Communications*.

2 Background

Section 502.17, *Voice Communications* was created to combine the voice requirements outlined in Section 502.4 - ADAMS and *Voice Communications System Requirements*, and ARS COM-001 *Telecommunications*. The voice communication system requirements have also been improved to address weaknesses and gaps in the existing requirements, including placing requirements on market participant to market participant voice communications. How Alberta would effectively restore the electrical system during a widespread and extended outage is a significant driver for the new requirements. The requirements intend to better leverage the existing utility telecommunication network, and to reduce our dependence on voice communications that depend on the electric system. Having control over the survivability (battery/generation at sites) and restoration of voice communications during an extended power outage means additional restoration delay should not result due to voice communications being unavailable.

3 Meaning of Control Room for Generators

For the purposes of Section 502.17, a control room is a location where an operator has direct control over a generating unit or facility. For direct control, the control room must be local to the generating unit or facility, and should not depend on external commercial communications to operate and control the generating unit or facility.

4 Control Room and Control Centres

The ISO expects control centres which remotely control generating units to meet the voice communication requirements for the total amount of generation they control. Control rooms for individual generating units or facilities are to meet the voice communication requirements based on the size of the individual generating unit or facility. Communication between a control room and control centre are expected to, at a minimum, meet the requirements of the control room.

5 Automatic Forwarding of Primary Direct Access Telephone Connection

Subsection 4(2) addresses the need for automatic forwarding to another number if the primary number is busy or otherwise not available. The intent of this requirement is for the forwarding to another number to achieve the same result as if the primary number had been answered. As such, the ISO encourages market participants to use any forwarding number that will be answered by a person who is available 24 hours a day, 7 days a week, and is able to take or initiate immediate action, as appropriate.

6 Primary Direct Access Telephone Connection Landline and Cellphones

Subsection 4(2) requirements apply regardless of whether the primary communication is accomplished by

¹ "Authoritative Documents" is the general name given by the AESO to categories of documents made by the AESO under the authority of the *Electric Utilities Act* and associated regulations, and that contain binding legal requirements for either market participants or the AESO, or both. AESO Authoritative Documents include: the ISO rules, the Alberta reliability standards, and the ISO tariff.

landline or by cellphone. The following are the concerns of the AESO with using a cellphone as primary communication: reliability of network and signal in rural areas, potential for the phone to be misplaced or damaged, and sustainability of the wireless network during an extended power outage due to increased traffic. Regardless of the concerns, failure of primary in general is mitigated by the backup voice communication requirements.

7 No Common Single Point of Failure

Subsections 4(3) and 5(2) provide that no common single point of failure is to exist between the primary and backup voice communication systems. This includes the phones and all supporting equipment (routers/switches/etc.) within the market participant's facilities, and the telecommunication infrastructure and network of service providers. For example, common points of failure exist between a land line and a wireless voice connection from the same service provider which more than likely share the same telecommunications infrastructure, and certainly the same network. Another example of a common point of failure is the same telecommunication infrastructure shared by two separate service providers based on a use agreement (like Telus and Bell who share rural networks).

8 No Other Backup Option is Feasible

Subsections 4(4) and 5(3) address the situation where no feasible backup option exists. In general, no feasible backup option exists if no valid backup voice communication option is presented in Table 1 or 2. This would suggest a region does not have additional independent service providers, all utility telecommunication infrastructure is unreachable without additional towers or long fibre deployment, and/or the utility telecommunication infrastructure doesn't have enough capacity.

When an exception is provided, the ISO expects the market participant to still attempt to obtain the most robust backup. As examples, using a classic voice circuit and a VOIP data circuit, using separate service providers even though some infrastructure is shared, and still using independent hardware within the market participant's facility.

The ISO recommends that market participants review exceptions at least every 5 years to see if an independent alternative has been developed and can be implemented.

The ISO expects market participants to provide the following information in order to receive an exception:

- Reason for the requested exception and options explored.
- Geographic location of facilities.
- Geographic location of telecom options (proposed and not feasible).
- Description of proposed design including all redundancy.
- Description of potential future plans.

9 Satellite Network System

Subsections 4(5) and 5(2)(a) indicates that both ends of a satellite voice communication connection must be from the same satellite network system. This communication should be independent of terrestrial based exchange between providers and even between ground stations of the same system (e.g. Globalstar architecture uses groundstations to connect between different satellites). The purpose of this requirement is to ensure independence/reliability of the satellite voice communication and to minimize the introduced voice latency which degrades its effectiveness. The type of market participants allowed to use satellite phones as their backup has been reduced to prevent the system from being overrun and improve voice communications with critical and important market participants during a restoration event.

10 Utility Orderwire System

Subsections 4(6) and 5(2)(b) provide a basic definition for the utility orderwire system. The utility

orderwire system is to leverage the utility telecommunication network infrastructure (fibre, microwave, routers, phone switches, etc.) operated by the TFOs, and at the edge the telecommunication network infrastructure of connecting market participants. It is to be independent of commercial telecommunication systems such that continued operation, during an extended power outage, can be assured and restoration activities are internally controlled. Leased assets such as dark fibre and tower access from 3rd party providers is acceptable assuming all active telecommunication equipment (router, radio, batteries, etc.) is independent. Using phone switches to route/forward voice communications via another market participant or centralized control centre is acceptable within reason (e.g. A generator reaching the AESO passing through a TFO phone switch).

11 Control Room to Control Room

Subsections 6(2) expects adequate communication between control rooms to ensure the effective coordination, exchange, and defined control of units. This does not need to be an internal system.

12 Mean Time To Repair

Subsections 7(2) and 7(3) provide requirements for the mean time to repair from a voice communication system failure. Only mean time to repair is specified without availability or mean time before failure to provide some flexibility and account for the variation in voice communication types and performance in different locations. The AESO recognizes that control over restoration isn't necessarily available for 3rd party services but expects voice communications to be repaired in a reasonable time period. As per 7(4) the ISO may provide exceptions due to extenuating circumstances. Where justified a market participant may elect to have multiple 3rd party providers to reduce the mean time before failure and mean time before repair.

13 Distributed Energy Resources Voice Requirements

While no voice requirements are defined for distributed energy resources between market participants, the ISO recommends that all distributed energy resources have, at a minimum, a primary voice communication system with the connected operator of an electric distribution system. An operator defines the voice communication requirements for distributed energy resources connecting to their system. In some instances where an anti-islanding scheme or other protection measure is required by the operator of a transmission facility, then additional voice communication requirements to that operator may also exist.

Revision History

Posting Date	Description of Changes
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