Minutes from Stakeholder Consultation Session on the Development of the Following Proposed New and Amended ISO Rules and Reliability Standards:

1) **Proposed amendments to Section 502.4 of the ISO rules, *Automated Dispatch and Messaging System and Voice Communication System Requirements* ("Section 502.4");**
2) **Proposed new Section 502.17 of the ISO rules, *Voice Communication System Requirements* ("Section 502.17");**
3) **Proposed new Alberta Reliability Standard COM-001-3, *Communications* ("COM-001-AB-3"); and**
4) **Proposed new Alberta Reliability Standard COM-002-AB-4, *Operating Personnel Communication Protocols* ("COM-002-AB-4"),**

collectively referred to as the ("communication ISO rules and reliability standards").

Location: Zoom Meeting
Date: July 20, 2020
Time: 9:00 a.m. to 12.00pm.

Attendees:

Company
Alberta Electric System Operator ("AESO")
AltaLink Management Ltd. ("AltaLink")
Alberta Utility Commission ("AUC")
ATCO Electric Ltd. ("ATCO Electric")
ATCO Power ("ATCO Power")
Best Consulting Solutions Inc. ("Best Consulting")
BluEarth Renewables ("BluEarth")
Capital Power Corporation ("Capital Power")
City of Lethbridge
Cenovus Energy Inc. ("Cenovus")
Dow Chemical ("Dow")
EPCOR Distribution & Transmission Inc. ("EDTI")
ENMAX Energy Corporation ("EEC")
ENMAX Power Corporation ("EPC")
GridSME
Heartland Generation Ltd. ("Heartland")
Suncor Energy Inc. ("Suncor")
TransAlta Corporation ("TransAlta")
URICA Energy ("URICA")
Voltus ("Voltus")

Introduction and Session Overview

- The AESO welcomed stakeholders to the session and advised everyone that: the session is being recorded and that the positions and comments raised are not binding; personal information is collected in accordance with the *Freedom of Information and Protection of Privacy Act*; and minutes will be available on the AESO website for review.
- The AESO advised the attendees on the COVID-19 updates, reviewed the purpose of the meeting and the agenda, reviewed its Stakeholder Engagement Framework, engagement principles and reviewed its expectations for stakeholder participation and guidelines.
- The AESO also reviewed its process for meeting minute development and provided information about how to use ZOOM.
- All AESO staff introduced themselves.

Rule Development Consultation Process Overview and Status Update

- The AESO presented an overview of the ISO rule development process and the reliability standard process as it pertains to the development of proposed new and amended Communications ISO Rules and Reliability Standards, noting that the AUC Rule 017, *Procedures and Process for Development of ISO Rules and Filing of ISO Rules with the Alberta Utilities Commission* ("AUC Rule 017"), which came into effect August 2018, applies to all ISO rules that are in development.
- The AESO stated that the development of the proposed new Section 502.17 had started prior to AUC Rule 017 coming into effect and that the AESO had held working group meetings with industry stakeholders at the time. The AESO mentioned that the minutes of the working group meetings were posted on the AESO website.
- The AESO advised that NERC COM-001 and Section 502.17 was decoupled COM 001 AB 3 was presented at ARCDG in December 2019 and the AESO received some initial feedback that will be addressed at this session.
- Proposed new Section 502.17 was revised to take into account stakeholder feedback received through the 2019 consultation activities, including removal of NERC COM 001 provisions. This will be discussed at this session.

Overview of the AESO's Current Proposed Approach to the Development of revised Proposed New COM-002-AB-4

- The AESO advised that proposed new COM-002-AB-4, remains the same as when the consultation was completed in April 2019. The AESO stated that it does not plan to consult further on this standard.
- The AESO advised that proposed amended Section 502.4 of the ISO rules, was further revised to only address the automated dispatch and messaging system ("ADaMS"), remove all references to voice communications and include those references in proposed new Section 502.17.
- The AESO stated that content related to proposed new COM-001-AB-3 was removed from proposed new Section 502.17 and the reliability standard was presented at the AESO Reliability Committee Discussion Group ("ARCDG") in December 2019. The AESO noted that it received some initial feedback in relation to proposed new COM-001-AB-3, that will be addressed at this session.

- The AESO clarified that the proposed new Section 502.17 was revised to address stakeholder feedback and remove NERC COM-001-3, *Communications* ("NERC COM-001") provisions. This was discussed at this session and is further detailed below.
- TransAlta inquired whether the timeline for consultation had been discussed.
- The AESO indicated that the timeline for consultation had not yet been established and that at the end of the session, the AESO would update stakeholders on next steps.

Update on the Proposed Amended Section 502.4

- The AESO advised that further revisions had been made to the draft of the proposed amended Section 502.4 that was consulted on in March 2019.
- The AESO determined that in addition to the voice communication requirements being removed from Section 502.4, other provisions could be removed. Specifically:
    - some provisions that had waivers or variance language could be removed as market participants can now request waivers or variances through the recently approved Section 103.14 of the ISO rules, *Waivers and Variances* ("Section 103.14").
    - there were provisions under the New and Existing Systems subsection that granted the AESO authority that was never used and is no longer needed. As a result, the AESO was removed from the applicability section and the rule no longer applies to the AESO.
    - there were carryovers from the original Operating Policies and Procedures that were no longer needed.
    - some minor updates made to account for the fact that the capacity market is not moving forward.
- The AESO received no comments or questions from attendees regarding the proposed updated requirements of Section 502.4.

Proposed New COM-001-AB-3 And Stakeholder Feedback Review

- TransAlta asked a general question and sought clarification on the current status of the draft proposed new COM-001-AB-3, specifically with regards to the direction COM-001-AB-3 was taking and what plans the AESO had going forward. TransAlta further sought confirmation on whether the AESO planned on rejecting or adopting the newest NERC version of COM-001-AB-3.
- The AESO provided clarification on the background and historical development of proposed new COM-001-AB-3. The AESO explained that in 2018, when it began work on the communication reliability standards, the plan at that point was to reject COM-001, but after the 2019 stakeholder consultation activities, the AESO reviewed and reconsidered that decision. The AESO further explained that in the November 28, 2019 update on consultation letter, it had outlined the new approach moving forward. The AESO provided an overview of the proposed new COM-001-AB-3 requirements, highlighting the reasons for difference and Alberta variances that were taken from the NERC version and the rationale for making those changes.
- The AESO indicated that prior to any formal consultation, it would take the comments received from the ARCDG and this stakeholder session into consideration when it prepares the draft for formal stakeholder consultation.
- The AESO asked that if the draft issued for formal consultation does not adequately address any concerns raised following the session, attendees can provide their comments in writing along with

supporting rationale during formal stakeholder consultation, and the AESO will provide a written reply.

- The AESO highlighted further revisions that were made to proposed new COM-001-AB-3 since the ARCDG meeting in December which are as follows:
    - the first revision was made to requirement R1 for the AESO to also have primary interpersonal communication capability with each adjacent interconnected transmission operator. This was missed in the previous proposed draft version of proposed new COM-001-AB-3;
    - the second revision was made to add the word "primary" and replace the word "alternative" with "back-up" to describe the type of interpersonal communication capability being referred to throughout proposed new COM-001-AB-3 in order to align with the terminology used in ISO rule sections 502.17.
    - the third revision was made to delete the provision in requirements R2, R4 and R9 for back-up interpersonal communication capability to "not use the same infrastructure as interpersonal communication for day-to-day operation". This provision was removed as the type of back-up communication infrastructure required is sufficiently covered in the proposed new Section 502.17.

- AltaLink requested that the AESO provide an explanation on what is changing from the existing COM-00-1, *Telecommunications* ("COM-001") reliability standard to the proposed new COM-001-AB-3.
- The AESO explained that NERC COM-001 was revised to address voice communication capability requirements and NERC COM-002, *Communications and Coordination* ("COM-002") was revised to establish communication protocols.
- The AESO stated that given the extensive revisions to COM-001, it is difficult to give a one-to - one analysis from the existing version to the proposed new version.
- The AESO explained that interpersonal communication capability is now in COM-001, while the specifics of the types of communication systems reside in the proposed new Section 502.17. The AESO further explained that the current protocol is to align Alberta reliability standards with the NERC standards, where practical.

COM-001 Stakeholder Concern 1 – Definition and interpretation of "Interpersonal Communication"

- There were some concerns regarding the interpretation of "interpersonal communication".
- Suncor requested clarification on whether two-way radio communication can be used to fulfill requirement R12, internal primary interpersonal communication system requirements. The AESO noted that, regarding field communications, two-way radio communication would be considered interpersonal communication.
- ATCO Electric asked if the AESO was considering defining "interpersonal communication" or adding the word "voice" to give clarity to market participants that the expectation is that the primary and back-up communication systems refer to voice communication systems, as indicated in proposed new Section 502.17.
- Capital Power suggested that the lack of clarity as it relates to "interpersonal communication" comes from the fact that NERC defines it as: any medium that allows two or more individuals to

interact, consult, or exchange information. Capital Power states that NERC's definition appears to differ from the AESO's definition that interpersonal communication is only voice. Capital Power echoed ATCO Electric's concern and asked whether the AESO will add a definition to the Alberta glossary to avoid confusion with the NERC Glossary definition of interpersonal communication.

- The AESO explained that "interpersonal communication" is not currently defined. The AESO stated that proposed new COM-001-AB-3 and proposed new Section 502.17 should be read together. The AESO stated that it believes the proposed new COM-001-AB-3 when read in the context of proposed new Section 502.17 is clear that the term "interpersonal communications" refers to voice.
- ATCO Electric asked whether the AESO would consider replacing "interpersonal" with "voice" to align with the terminology in proposed new Section 502.17.
- The AESO noted that discussions were had internally during rule development regarding replacing "interpersonal" with "voice" to align with proposed new Section 502.17. The AESO determined that it would leave the current language as is, in order to align with NERC. The AESO noted that, in its view, the relationship between the rule and the standards are clear as it pertains to voice communication. Nevertheless, the AESO stated that it will give this issue some further consideration.
- ENMAX Energy agreed with the other attendees and stated that it would be helpful to clarify voice as "interpersonal communication", even if it is through an information document.
- ATCO Electric also agreed that it may be beneficial to have a definition for the AESO, especially when it differs from NERC's.
- The AESO indicated that NERC appears to be using general terms and has left it open for entities to use different types of communication mediums. The AESO stated that it will take the comments received into consideration.

COM-001 Stakeholder Concern 2 – Review of Requirement R3 of Proposed New COM-001-AB-3

- Suncor requested that the AESO review requirement R3 of proposed new COM-001-AB-3 which states that "…each operator of a transmission facility must have primary interpersonal communication capability with (d) each operator of an aggregated generating facility within its area…".
- Suncor sought clarification on if and how an operator of a transmission facility should comply with requirement R3(d) in a situation where the operator of a transmission facility is also registered as an operator of an aggregated generating facility and those facilities are operated from different rooms in the same building.
- Suncor inquired whether there was a need to have a phone in the transmission control room and another phone in the generating control room. Suncor explained that as an operator of a transmission facility, it has an obligation to the AESO and; therefore, must have a phone with the AESO but needed confirmation on whether it is necessary to have a designated phone in their internal control room. Suncor requested confirmation on whether this requirement will entail having two different phones, one to the AESO, and the other one to the internal generating control room.
- The AESO stated that its initial thoughts were that phone requirements would apply to both control rooms. The AESO suggested that specific questions such as these could be forwarded to

the AESO in writing. The AESO reiterated that based on the rule, primary phone operators from the AESO or other interconnecting owner of a transmission facility ("TFO") would certainly need to communicate with the Suncor TFO, and the AESO would still require communication with Suncor owner of a generating facility ("GFO") and if those are different rooms, then a phone in each room would be required.

- The AESO stated that it does not believe that the primary phones between the TFO and the AESO and between the GFO and the AESO are required to be a different phone, so long as the requirements stipulated in proposed new Section 502.17 are complied with.

COM-001 Stakeholder Concern 3 – Clarity on Requirement R9 of Proposed New COM-001-AB-3

- ATCO Electric requested clarity on requirement R9 regarding testing of its back-up interpersonal communication capability. Specifically, ATCO Electric asked in the event the primary fails, what type of evidence would be needed to show that the back-up system is functional. ATCO Electric further inquired whether evidence such as operator logs or voice recordings would suffice.
- The AESO responded that ATCO Electric's suggested pieces of evidence sounded reasonable and clarified that requirement R9 deals with the testing of the back-up communications. The AESO explained that, with respect to requirement R9, the primary is still functional at this point and the back-up has failed and thus one has to initiate an action and show what will be used as an alternative until the back-up is repaired.
- ENMAX Power requested that the AESO provide clarity in an information document regarding the back-up interpersonal communication system testing in requirement R9. Specifically, it asked whether an echo or a delay of a satellite phone during back-up interpersonal communication system testing constitutes a failed test in situations where the operator of a transmission facility uses a satellite phone service as a back-up interpersonal communication system. ENMAX Power suggested that a cell phone may be used as a temporary back-up.
- The AESO responded that, in terms of designating a back-up, a cell phone would be appropriate. The AESO further clarified that the use of utility orderwire and satellite phone will depend on the size of the generator, and possibly different satellite phone systems may work better in different regions. The AESO also suggested that Section 103.14 could be used in instances where no reasonable solution was possible.
- The AESO confirmed that satellite phones have operational limitations which is part of the challenge that is being faced today. One specific challenge is, what would happen if there is a restoration event or phones become unavailable. The AESO maintained that there is a need to be able to rely on not just a cell phone but to contend with satellite phones despite all the poor-quality issues, rather than be solely dependent on cell phones. The AESO explained that defining a cell phone as a back-up, could work for day to day operations, but in a situation where the cellphone is unavailable, there may be a need to have satellite phones.
- The AESO advised that it would investigate satellite performance in terms of the operational limitations and are open to further discussions on this issue.
- ATCO Electric asked whether the AESO intends to clarify the use of cell phones in an identification document and inquired on how auditing will be conducted, specifically, what type of evidence would be required by the compliance team to ensure that market participants are compliant.

- The City of Lethbridge suggested that the satellite phone performance issue may just be an installation issue and could be due to the proximity to the antennae.
- The AESO agreed that what the City of Lethbridge suggested could be a possibility and explained that at the AESO, there are signal boosters that are required for the system control center. The AESO further stated that different systems have different coverage ranges, for instance, increased proximity to the mountains results in poorer quality. Nevertheless, the AESO clarified that there may be a number of technical improvements that could be made to the existing systems.
- Suncor asked if the AESO could provide an information document in a timely manner so that market participants have time to switch the satellite phones service provider before the rule becomes effective.
- The AESO stated that the two satellite providers currently being used will remain the same.
- The City of Lethbridge requested clarity around the type of evidence required for voice recording, specifically regarding how many years of this information would be required during an audit.
- The AESO noted that according to the compliance protocol, recordings are being kept for at least a three-year cycle. However, from a business perspective, the current practice at the AESO is that they are held for as long as necessary since voice recordings are monitored for market purposes and other applications.

COM-001 Stakeholder Concern 4 – Clarity on Requirement R12 of Proposed New COM-001-AB-3

- Suncor requested that the AESO clarify requirement R12 as it pertains to two-way voice communication. Suncor specifically asked whether using a radio to communicate with field personnel would meet the requirement of internal primary interpersonal communication.
- ATCO Electric further stated that clarity was needed in respect of requirement R12 regarding the type of evidence that would be required. ATCO Electric stated that recording would be impossible from a radio and asked if a diagram showing the communication between the control room and the field, operator logs or even including it in their operating procedure would suffice.
- The AESO agreed with ATCO Electric and stated that it has similar types of diagrams for various requirements and would also recommend mentioning the field communications system in their operating procedure.
- The AESO agreed that proposed new Section 502.17 has requirements that include call forwarding and connecting to a telephone system, which may not be possible with a mobile radio system. The AESO stated that it intends to revisit the language to ensure that it is clear.
- ATCO Electric sought clarification on whether the internal primary interpersonal communication system between control centres and between the control centre and field personnel can be different systems.
- The AESO confirmed that market participants can use a different internal primary communication system between control centers and field personnel.

Proposed New Section 502.17 and Stakeholder Feedback Review

- The AESO provided an overview and background regarding the proposed new 502.17 and what had transpired since the July 2019 stakeholder session.

- The AESO provided a summary of the feedback it received and stated that it considered the following stakeholder concerns and comments:
    - Concerns about utility orderwire
        - as selected medium versus alternatives (benefits/consultation)
        - 300 MW threshold for generation
        - comparison to other jurisdictions
        - cost (implementation/operational)
        - implementation timeline
    - Preference for balanced architecture for utility orderwire
    - Concerns on availability targets and external dependencies
    - Concerns on extended power duration and scope clarity
    - Concerns regarding lack of clarity on roles and responsibilities
- The AESO also stated that since stakeholder feedback was received, it has revised its approach to availability. The AESO explained that the availability threshold has now been revised to the target of 98% and only applies to utility orderwire, which is the required system for the most critical facilities from a restoration perspective.

Proposed Definitions Review

- The AESO reviewed its proposed new definition of utility orderwire service, which means “an electric utility controlled and operated private voice communication system that leverages the utility telecommunication network infrastructure and passive telecommunication infrastructure where continued operation during extended power outage can be assured and restoration activities are controlled by utility market participants”.
- The AESO stated that it is also proposing to adopt the “radial circuit” definition for use in the ISO rules.
- Suncor asked if the radial circuit term has the same meaning as stated in the current information document that is posted on the AESO website.
- The AESO noted that the radial circuit definition being proposed is the same one that is being proposed for use in the reliability standards and that the definition is currently before the Commission for approval.

Proposed System Project

- ENMAX Energy requested more information regarding the proposed system project as noted on the last slide of the presentation. Specifically, what the scope of the project would be.
- The AESO introduced the proposed system project, noting that it is being considered to implement the utility orderwire system for existing facilities. The AESO, however stated that it is considering several options and will update stakeholders as details relating to the project scope are finalized.
- The AESO noted that changes to the SCADA rule are also being contemplated as part of the system project and both changes aim to address operational risk.

Section 502.17 Stakeholder Concern 5 – Utility Orderwire Cost Considerations

- Suncor asked whether the AESO considered the Industrial Systems Designation market participants as part of the scope for the utility orderwire upgrade. Suncor wondered whether there was any other equipment apart from the existing fibre communication that may be required, and whether those costs were considered. Suncor commented that it is not a regulated asset and cannot recover its cost through the ISO tariff.
- The AESO explained that any generator that has maximum authorized real power that meets the criteria, will fall under the requirements of the rule. The AESO noted that the scope of Section 502.17 applicability is limited to non-radial TFOs and generators over 300 MW. The AESO explained that for the cost estimate, there had been an attempt to incorporate expected costs of the TFO based on understood infrastructure. The AESO agreed that additional work needs to be done to refine costs closer to implementation.

Section 502.17 Stakeholder Concern 6 – Utility Orderwire Implementation Timeline

- The AESO explained that it has reviewed its plans regarding implementation timeline for utility orderwire and noted that it is still targeting around two years. The AESO updated stakeholders on how the AESO is handling the implementation timeline, stating that the current plan is to use Section 103.14 to provide additional time, if required by market participants, rather than hard coding it into the rule. The AESO assured attendees that this will provide some flexibility regarding implementation.
- The AESO explained that it had considered the different architecture and prefers the TFO hub option with Altalink and ATCO as primary hubs that will support the other TFOs and GFOs in establishing connections and supporting their phone connections.

Section 502.17 Stakeholder Concern 7 – Utility Orderwire in Other Jurisdictions

- The City of Lethbridge questioned if in addition to Europe and California that use utility orderwire rather than satellite phones, whether any discovery was done with any Canadian entities as it pertains to following a similar approach.
- The AESO provided clarification regarding the suggestion that Europe and California use utility order wire is not entirely accurate. The AESO advised that those are just two examples where it uses commercial phones or enhanced commercial phone networks for the purposes of the power system operation.
- The AESO stated that it researched other Canadian jurisdictions such as BC Hydro or the Ontario Independent Electricity System Operator (“IESO”) to determine their approach and found that Ontario allows satellite phones to be used as a back-up phone. The AESO further noted that Ontario’s Hydro One network can be leveraged for SCADA back-up and the cost difference for voice when using the same telecom infrastructure is minimal. The AESO explained that Alberta is somewhat unique when compared to others as detailed in the presentation slide #63. As an example, the AESO stated that Ontario has 9 or 10 interconnections to the United States, Quebec, and Manitoba that may support restoration efforts in the event of a blackout event.

Section 502.17 Stakeholder Concern 8 – Use of Satellite Phones

- The City of Lethbridge asked if it was possible to continue using the current satellite phones until they are fully depreciated, especially since they are still working adequately.

- The AESO indicated that certain market participants are no longer allowed the use of satellite phones within the proposed new Section 502.17 and will not be allowed to continue its usage as their designated back-up.
- The AESO explained that the market participants it understands to require utility orderwire are listed in the proposed architecture design slides. The use of TFO and GFO is intended to be the operators of those facilities in alignment with the applicability section of the proposed new Section 502.17.

Section 502.17 Stakeholder Concern 9 - Cost to Comply

- Capital Power asked the AESO for further clarification regarding cost that will be borne by non-regulated entities. Capital Power questioned whether the AESO has conducted analysis in respect of cost consideration, including determining potential liability issues, performance testing, and commercial arrangements that have existed between the GFOs and the upstream TFOs.
- The AESO agreed that in considering operating costs, agreements are required between the parties. The AESO stated that these services are currently being carried out between the parties.
- Capital Power stated that as it relates to choosing a specific architecture, the AESO should conduct a full cost/benefit analysis of this approach. Capital Power explained that commercial arrangements between the parties increases the commercial cost the parties would incur.
- The AESO responded that Capital Power's made a fair comment.
- The AESO stated that it has determined that utility orderwire for our most critical assets are key to ensuring that we have an effective back-up communication system. The AESO advised that the odds of a blackout event are very slim, but the economic impacts, should it occur, are hard to quantify. The AESO explained that the Fort McMurray fires are a good example, where there was a loss of an estimated $70 million a day. In addition, based on some of the research the AESO found, the floods that shutdown downtown Calgary had a significant impact on the GDP of Canada and Alberta by approximately between $1.7 to $3.4 billion".
- The AESO further stated that the US Northeast blackout was on a much larger scale and had an economic impact in multibillion dollars.
- The AESO reinforced the need for a utility orderwire and reiterated that the cost of implementing this system from a capital perspective is necessary as it ensures that the province has the restoration capabilities it needs. The AESO concluded that it is of the opinion that the costs of this project are justified.
- Capital Power agreed with the AESO's perspective that there is a system benefit to be derived. However, Capital Power asked if there is any consideration being made for cost recovery for non-regulated entities who bear the cost, especially since there is some inequity between those critical generators and other generators. Capital Power argued that there is a strong case to be made in respect of cost recovery and advised that the AESO re-evaluate the issue of cost recovery as there is significant cost to be borne by generators to meet the rule requirements.
- The AESO indicated that it was exploring several options and is currently not certain of how costs for generators like Capital Power, who, because of their size, play a larger role in the overall system reliability, will be treated. The AESO stated that cost was certainly taken into consideration when these requirements were included in the proposed new Section 502.17. The AESO also pointed out that it would look at approving waiver and variance requests in specific cases, if the cost significantly outweighs the benefit.

- Capital Power asked whether the AESO's plan to explore the costs and potential for cost recovery will be conducted before the rule is filed with the AUC and if it will be consulted on.
- The AESO indicated that a decision will be made about the AESO's approach and the scope prior to filing proposed new Section 502.17 with the AUC. With regards to consultation, the AESO noted that it is yet to determine how consultation would occur. The AESO stated that if it does proceed by way of a system project, it could involve notification to impacted parties. The AESO also committed to ensuring that stakeholders are kept in the loop regarding any decisions being made.
- Altalink sought further clarifications on funding mechanism for operators of generating units, the initial uplift and expectation for coordination. Specifically, Altalink asked whether there is an expectation for Altalink to coordinate the implementation project across all market participants who connect to their system.
- The AESO noted that the mode of implementation is currently being considered. The AESO acknowledged that Altalink and ATCO Electric are central hubs, with the requisite systems and infrastructure and will play a larger role as it pertains to implementation and coordination with other market participants. The AESO assured Altalink and ATCO Electric that it is willing to support those efforts and help the coordination with the other market participants.
- ENMAX Power requested more details in respect of the AESO's consideration for choosing a utility orderwire system. ENMAX Power asked if the AESO had conducted a comparison between utility orderwire service and other voice communication system technologies, other than satellite phone, and if so, why the AESO chose a utility orderwire system.
- The AESO explained that in addition to satellite, it considered mobile radio, an enhanced commercial system, and a modified satellite solution. The AESO stated that it had not found a better system that would meet its requirements in terms of having an effective and reliable back-up. The AESO explained its rationale for selecting utility orderwire as the preferred alternative, and the alternative for the most critical assets on the transmission system.
- The AESO explained that commercial networks have a pitfall that they are dependent on the AESO to supply their sites. The AESO acknowledges that there is back-up power capability in some locations but the AESO does not have a full visibility of that infrastructure. The AESO explained that if the back-up uses the same system as the primary for the critical restoration assets, restoration could be a huge challenge.
- The AESO further explained that, for commercial systems, if there is a major event, the challenge is that there is no visibility or control of the infrastructure status or restoration efforts.
- The AESO maintained that with the utility orderwire system, the AESO and TFOs can prioritize resources and direct utility telecom technicians as needed to maintain or repair the system.
- The AESO stated that in rural areas, commercial networks are less likely to have the necessary battery back-up systems that may be needed during an extended restoration event and would not be focusing their resources on these areas with small customer bases.
- The City of Lethbridge requested clarity regarding smaller entities and stated that it had assumed that it would only require duplicate back-up infrastructure with its connected transmitter. The City of Lethbridge explained that it can maintain their current satellite phones with the AESO especially since it will be the entity that the system controller or operator will be communicating with during system emergency events.

- The AESO responded that it had considered smaller transmission facilities that have limited interconnection points. The AESO explained that the City of Lethbridge represents a decent size load in the south, which from a restoration perspective is important. The AESO noted that if there was a restoration event, the AESO may be controlling some islands, however the TFOs like ATCO and AltaLink will also be controlling individual islands. The AESO reiterated the importance of the City of Lethbridge having effective back-up voice communications.

Section 502.17 Stakeholder Concern 10 – Roles and Responsibilities

- ATCO Electric stated that it expected the AESO to take a lead role in getting other market participants to ensure access to the ATCO Electric and AltaLink system. ATCO Electric suggested that in the event a market participant chooses not to comply, it should be up to the AESO to follow-up and not the responsibility of ATCO Electric or AltaLink.
- The AESO stated that once the rule comes into effect, it will be the responsibility of each of the market participants to comply with the rules. The AESO explained that in the case of a breach, it will be a compliance issue and may necessitate a self-report.
- Suncor requested clarity on the primary voice communication requirements outlined in subsection 2 of proposed new Section 502.17, specifically if all associated voice communication system equipment had to be located in its control centre and control room.
- The AESO clarified subsection 2 of the proposed new Section 502.17 and stated that the phone needs to be in the room where the controller/operator can access it but additional equipment that is used to enable and ensure phone functionality can be located elsewhere in the same facility.
- Capital Power sought clarification regarding roles and responsibilities between GFOs and TFOs. Capital Power noted that there is more of a role for the AESO to play, specifically in scoping the relationship, ensuring there is appropriate interoperability between systems and ensuring efficiency in the commercial management of those relationships.
- The AESO asked if attendees had given some thought as to what they would want from the AESO regarding the roles and responsibilities of the AESO in this project.
- Capital Power reiterated that there is a need to define the expectations around performance, testing, timelines, liability between the parties, and enforcement. Capital Power stated that a lot of the details of that relationship are not fully sorted out in the requirements of the proposed new Section 502.17.
- ATCO Electric had some concerns regarding leaving it up to the GFOs and TFOs, specifically with regards to issues relating to timelines, expectations for installations and testing. ATCO Electric requested the need for the AESO to play a larger role in ensuring that market participants comply with the requirements.
- The AESO sought attendees' opinions regarding their expectations, specifically with regards to rule requirements, or some other process that would assist in determining roles and responsibilities between market participants.
- ATCO Electric stated that it does not believe more rule requirements are needed; however, what is needed is for the AESO to ensure that market participants are doing what they are ought to do and are adhering to the timelines, especially since they have two years to become compliant. ATCO Electric stated that it is imperative that the AESO is looking at how the project is being managed and ensuring that things are progressing appropriately.

- The AESO responded that it is exploring options on how to implement changes going forward and would like to see this rule implemented in an effective way. The AESO assured attendees that it will be available to provide support when needed.
- ATCO Electric stated that there has to be planned check-in points throughout the project to ensure that everybody is on track. ATCO Electric agreed with the comments regarding the interaction between TFOs and GFOs and the role that the AESO would have to play. ATCO Electric suggested that joint use agreements detailing performance requirements, testing, liability may have to be executed between the parties.
- The AESO suggested that market participants may use joint-use agreements or service agreements, and for new participants possibly interconnection agreements could be used. The AESO stated that it believes a large concern on ATCO Electric's and Altalink's part is the issue of troubleshooting. The AESO acknowledged that the ATCO Electric and AltaLink have been working on improving those processes. The AESO advised that it is not sure there is additional language it could include in the rule that would clarify this issue but will endeavor to support the different interactions between market participants to get to a resolution.
- The AESO stated that the issue of roles and responsibilities would need to be addressed further.

Stakeholder Concern 12- Compliance involvement in rule development

- TransAlta suggested that the AESO should involve AESO's compliance monitoring group for input as it relates to compliance.

Additional Clarifications

- ATCO Electric requested clarity on whether it is the AESO's expectation that the proposed utility orderwire system will be based on Voice Over IP ("VOIP") technology.
- The AESO responded that it reviewed VOIP technology and interoperability in a previous stakeholder session.
- The AESO explained to attendees that it can help facilitate some of those discussions where needed to bring in legacy systems. The AESO explained that there are converter boxes that will convert the analog phone to a digital one which can be interfaced with the existing system or the VOIP systems that will be operated within the AltaLink and ATCO Electric hubs.
- The AESO stated that it is looking forward to further engagement and making this implementation effective, noting that once the rule is effective, the transmission system would be in a much better place in the event of a restoration, or even in normal operations.
- The AESO explained that the 9-month implementation timeline is calculated after the rule and standard come into effect. The AESO added that the utility orderwire requirement of proposed new Section 502.17 will have a later effective date. The AESO reiterated that if compliance timeline is a problem, there is always an alternative via the waivers and variance rule Section 103.14 for a waiver or variance request to be made.
- The City of Lethbridge commented that for redundancy purposes, satellite phones guarantee separation of mediums for back-up communications and asked whether the optical fibre that order wire uses such as Optical Ground Wire or All-Dielectric Self-Supporting (OPGW or ADSS) have the potential to share a common medium (Sheath) especially for remote facilities such as Northern Ontario, where alternate mediums are not available and satellite phones have been sufficient.

- The AESO explained that there are some specific areas where utilities use dark fibre or leased fibre. The AESO further stated that, for the most part, utility telecom infrastructure is a completely independent system and that orderwire is only a requirement for the most critical facilities. The AESO reiterated that the aim is to prevent a situation where multiple critical facilities are unreachable, and the ability to operationally compensate is compromised. The AESO concluded that dependence on a single network for critical facilities is a huge risk to the system.
- An attendee sought clarification on the "primary voice communication" interpretation. Specifically, whether a cell phone can be used when the requirement stipulates "automatically forwarded to another direct access telephone". The AESO responded that it believes a cell phone can be used and noted that in the existing information documents the AESO provides clarification on the call forwarding.

Wrap Up and Next Steps

- The AESO noted that it would be helpful for attendees to have additional opportunity to provide written comments on what was presented at this session, specifically the draft COM-001-AB-3 and proposed new Section 502.17.
- The AESO stated that the requested written feedback would be useful to ensure that the AESO has heard all stakeholders' questions and concerns on the latest draft communication ISO rules and reliability standards.
- The AESO commented that after the session, more discussion would be needed in a few areas and acknowledged that there are a few outstanding issues that would need to be investigated further. These areas include:
    - the issue regarding delineation of roles and responsibilities;
    - gathering more information on the system project piece; and
    - for the COM-001-AB-3 standard, the proposed definition for the "interpersonal communication" or "voice communication system".
- The AESO thanked everyone for attending and participating and encouraged all attendees to subscribe to the AESO's newsletter which would contain all updates on the communication reliability standards and ISO rules once information is available.