

# Stakeholder Comment Matrix for Additional Feedback



<b>Period of Comment:</b> July 25, 2019 through September 5, 2019	<b>Contact:</b> Dan Bamber
<b>Comments From:</b> ATCO Electric Ltd	<b>Phone:</b> 780-918-0986
<b>Date [yyyy/mm/dd]:</b> 2019/09/05	<b>Email:</b> dan.bamber@atco.com

## Instructions:

1. Please fill out the section above as indicated.
2. Please refer back to the *Letter of Notice of Proposed New and Amended ISO Rule* under the “Attachments” section to view the actual draft of the proposed new Section 502.17.
3. Please refer to the *Stakeholder Comment Matrix for Additional Feedback Attachment (“Attachment”)* for further information regarding AESO assumptions and instructions for completing the sections below.
4. Please respond to the questions below and provide your specific comments, proposed revisions, and reasons for your position underneath, if any. Blank boxes will be interpreted as favourable comments.
5. Please be advised that general comments do not give the AESO any specific issue to consider and address, and results in a general response.

Item #		Stakeholder comments
	<p><b><u>AESO's Preferred Orderwire Architecture</u></b></p> <p><b><i>Cost and Timeline to implement and operate the mesh option orderwire architecture.</i></b></p> <p>Please provide:</p> <ul style="list-style-type: none"> <li>(a) the implementation cost and implementation timeline; and</li> <li>(b) the operational cost;</li> </ul> <p>of the AESO's preferred orderwire architecture mesh option using the assumptions and architecture provided in the Attachment.</p> <p>Please include all assumptions used for the list of variables provided in the Attachment. Where possible, provide a breakdown of the cost and implementation timing by proposed new Section 502.17 requirements. If you are unable to provide the costs and timeline of complying with a proposed new Section 502.17 requirement, please state that requirement and why you are unable to provide the information at this time. Please list any issues related to budgetary cycles separately.</p> <p><b><i>Please indicate which type of stakeholder you are:</i></b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b><i>Operator of a transmission facility</i></b></li> <li><input type="checkbox"/> <b><i>Operator of a generating unit or operator of an aggregated generating facility with a maximum authorized real power ("MARP") of 5 MW or greater</i></b></li> <li><input type="checkbox"/> <b><i>Other (please specify in the comments)</i></b></li> </ul>	<p>Implementation Cost: \$236,000</p> <p>Implementation Timeline: 18-24 months, depending on amount of discussion required between stakeholders.</p> <p>Operation Cost: \$180k/year, including head-end 24/7 vendor support, and regular system O&amp;M.</p> <p>Assumptions:</p> <ol style="list-style-type: none"> <li>1. A new PBX will be deployed to support the Utility Orderwire, and in the future will be expanded to extend VOIP to all network-connected AET substations.</li> <li>2. One new PRI-based connection to the AESO will be deployed, via Altalink's network.</li> <li>3. One new PRI-based connection to Altalink will be deployed.</li> <li>4. Two new connections to ISDs (Syncrude Mildred Lake, Suncor Millennium) assumed.</li> <li>5. Two new connections to operators of generating facilities (Battle River, Sheerness) assumed.</li> <li>6. One new connection to operators of aggregated generating facilities (Sharp Hills) assumed.</li> <li>7. Unknown</li> <li>8. No variances to 502.17 requirements assumed.</li> <li>9. -</li> </ol>

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2	<p><b>Orderwire Architecture Options</b></p> <p>Which of the following orderwire architecture options do you support, if any:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Mesh Option</li> <li><input type="checkbox"/> Operator of a Transmission Facility Hub Option</li> <li><input checked="" type="checkbox"/> AESO Hub Option</li> <li><input type="checkbox"/> Other (please provide details in the comments)</li> </ul> <p>The architecture for the first 3 options can be found in the Attachment. Please provide the rationale for your opinion or suggest an alternative option.</p>	<p>AE supports the AESO Hub Option, because it combines the minimal complexity of the TFO Hub Option (single connections between participants) with the improved reliability of the Mesh Option (Altalink PBX is not a single point of failure).</p>

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3	<p><b><u>Stakeholder's Preferred Orderwire Architecture Option</u></b></p> <p><b><i>If you do not support the AESO's preferred mesh option, please provide the cost and timeline to implement and operate the orderwire architecture option you support.</i></b></p> <p>Please provide:</p> <ul style="list-style-type: none"> <li>(a) the implementation cost and implementation timeline; and</li> <li>(b) the operational cost;</li> </ul> <p>of the Orderwire architecture option.</p> <p>Please provide all assumptions used to determine the costs and timeline, including your assumptions for the list of variables provided in the Attachment. Where possible, provide a breakdown of the cost and implementation timing by proposed new Section 502.17 requirements. If you are unable to provide the costs and timeline of complying with a proposed new Section 502.17 requirement, please state that requirement and why you are unable to provide the information at this time. Please list any issues related to budgetary cycles separately.</p> <p><b><i>Please indicate which type of stakeholder you are:</i></b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b><i>Operator of a transmission facility</i></b></li> <li><input type="checkbox"/> <b><i>Operator of a generating unit or operator of an aggregated generating facility with a maximum authorized real power ("MARP") of 5 MW or greater</i></b></li> <li><input type="checkbox"/> <b><i>Other (please specify in the comments)</i></b></li> </ul>	<p>Implementation Cost: \$240,000</p> <p>Implementation Timeline: 18-24 months, depending on amount of discussion required between stakeholders.</p> <p>Operation Cost: \$180k/year, including head-end 24/7 vendor support, and regular system O&amp;M.</p> <p>Assumptions:</p> <ol style="list-style-type: none"> <li>1. A new PBX will be deployed to support the Utility Orderwire, and in the future will be expanded to extend VOIP to all network-connected AET substations.</li> <li>2. One new PRI-based connection to the AESO will be deployed, via Altalink's network.</li> <li>3. No new connections to adjacent TFOs are assumed.</li> <li>4. Two new connections to ISDs (Syncrude Mildred Lake, Suncor Millennium) assumed.</li> <li>5. Two new connections to operators of generating facilities (Battle River, Sheerness) assumed.</li> <li>6. One new connection to operators of aggregated generating facilities (Sharp Hills) assumed.</li> <li>7. Unknown</li> <li>8. No variances to 502.17 requirements assumed.</li> <li>9. -</li> </ol>

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4	<p><b>Availability Requirements</b></p> <p>Whether you agree with the availability targets set out in subsection 8, <i>Performance and Maintenance of Primary and Backup Voice Communication Systems</i>, of the proposed new Section 502.17. Please explain why or why not. If you do not agree, please provide suggested changes and the rationale for your suggestion.</p>	<p>AE does not agree with the requirements proposed in subsection 8, for the following reason. TFO communication systems today generally are designed to satisfy the availability requirements identified in either Section 502.8 for SCADA communications, or in Section 502.3 for protection communications. These requirements in turn influence design factors such as redundancy and diversity. The AESO is proposing to introduce a third set of requirements that are quite similar to those in Section 502.3, but slightly different:</p> <table border="1" data-bbox="1073 561 1982 808"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Minimum Availability</th> </tr> <tr> <th>502.8 SCADA</th> <th>502.17 draft</th> </tr> </thead> <tbody> <tr> <td>Generator, MARP &lt;50MW</td> <td>98.0%</td> <td>95.0%</td> </tr> <tr> <td>Generator, MARP 50MW - 300MW</td> <td>98.0%</td> <td>99.0%</td> </tr> <tr> <td>Gen, MARP &gt;300 MW</td> <td>99.8%</td> <td>99.5%</td> </tr> <tr> <td>TFO, RAS elements</td> <td>99.8%</td> <td>99.5%</td> </tr> </tbody> </table> <p>AE believes that the differences are not significant enough to be meaningful to network or circuit design, and therefore recommends that the availability requirements in Section 502.17 be made the same as those identified in Section 502.8.</p>		Minimum Availability		502.8 SCADA	502.17 draft	Generator, MARP <50MW	98.0%	95.0%	Generator, MARP 50MW - 300MW	98.0%	99.0%	Gen, MARP >300 MW	99.8%	99.5%	TFO, RAS elements	99.8%	99.5%
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	<p><b>Extended Power Outage Requirements</b></p> <p>Whether you agree with the requirements for market participants during extended power outages of its facilities set out in subsection 9, <i>Extended Power Outage</i>, of the proposed new Section 502.17. Please explain why or why not. If you do not agree, please provide suggested changes and the rationale for your suggestion.</p>	<p>AE does not agree with the requirements proposed in subsection 9, because the section as written suggests that the specified requirement applies equally to the endpoint control centers and all intermediate network sites in between. It should be rewritten to separately identify the requirements of each.</p>																	
6	<p><b>Operational Requirements</b></p> <p>Whether you agree that the proposed new Section 502.17 effectively captures the ongoing operational requirements of the proposed architecture. Please explain why or why not. If you do not agree, please provide suggested changes and the rationale for your suggestion.</p>	<p>AE does not agree. As written the draft Section does not identify which parts of the overall orderwire system are the responsibility of each involved party. These responsibilities and the demarcations between them should be defined in the Section.</p>																	

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7	<p><b>Utility Orderwire Description</b></p> <p>Whether you agree with the AESO’s description of “utility orderwire” as:</p> <ul style="list-style-type: none"> <li>(a) a service that is independent of external commercial telecommunication services such that continued operation, during an extended power outage, can be assured and restoration activities are internally controlled;</li> <li>(b) being able to leverage the existing utility telecommunication network infrastructure, including fibre, microwave, routers, and phone switches; and</li> <li>(c) including, if applicable, leased assets, such as dark fibre and tower access from 3<sup>rd</sup> party providers, where the active telecommunication equipment (router, radio, batteries, etc.) is controlled by the market participant.</li> </ul>	<p>AE agrees with the AESO’s description but believes that greater clarity could be provided if in item (a) the ‘service’ were further described as a ‘<i>telephony-based service</i>’ to distinguish it from available orderwire products which are not telephony-based and mitigate inter-operability concerns arising from that issue.</p>
8	<p><b>Other</b></p> <p>Please provide any other feedback or suggestions you have on the proposed new Section 502.17. Please provide the rationale for your suggestion.</p>	<p>AE has no further suggestions.</p>

***Information Document - The AESO intends to develop an information document to accompany the proposed new Section 502.17. At a minimum, the AESO suggests that such an information document would contain descriptions of a utility orderwire and a control room for generators. Please provide your views on the type of content that should be included in an information document associated with the proposed new Section 502.17. Please provide the rationale for your suggestion.***

AE believes that this document should include identification of the areas of responsibility for the overall system and the demarcations between them. In particular, what are the TFOs responsible for and what are the MPs responsible for. AE further believes that the demarcation between TFO responsibility and MP responsibility should be at the fence outside the substation the MP is connected to.