Date of Request for Comment: December 10, 2018

Period of Comment: December 10, 2018 through January 17, 2019

***Please provide your comments on the following (as set out in AUC Rule 017 s. 7.2(b-j)):***

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| 1 | whether you are of the view that proposed new ISO rule Section 502.7, *Load Facility Technical Requirements* relates to the capacity market and why or why not | **AltaLink Management Ltd. ("AltaLink")**<br>1. AltaLink agrees that the proposed new ISO rule Section 502.7 relates to the capacity market.<br>The capacity market is a framework that facilitates sufficient capacity to supply energy, incuding the procurement of ancillary services, to satisfy the needs of Albertans. Under Alberta's capacity market framework, a load facility could participate in the capacity market through a variety of means including, but not limited to, demand response, behind the fence generation, or energy storage.<br>Given the ISO rule Section 502.7 sets technical requirements for all applicable load facilities connected to the grid, as the capacity market develops, the AESO should ensure that all rules are consistent with each other so as to avoid conflict between rules that may result in violations of requirements under a rule such as the limits set in the new ISO rule Section 502.7 by load facilities who engage in demand response, behind the fence generation, and/or on-site energy storage activities. | The AESO acknowledges AltaLink's comment. |
| 2 | if the answer to item #1 is yes, whether you agree that proposed 502.7, *Load Facility Technical Requirements* should or should not be in effect for a fixed term and why or why not | **AltaLink Management Ltd. ("AltaLink")**<br>2. AltaLink recommends a fixed term of ten (10) years be applied to the proposed ISO rule as there will be numerous changes taking place in the Alberta electric system during this period and this would ensure a review is completed to assess how those changes impact this ISO rule. | 2. The AESO does not agree that proposed Section 502.7 requires a fixed term. While the AESO acknowledges that there will be numerous changes taking place in the Alberta electric system during the next 10 years, the AESO is of the opinion that current processes, both internal and external, allow for appropriate review and amendment of the ISO rules. In particular, the AESO's ISO Rule Proposal process, |

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| | | | established pursuant to section 20.81 of the Electric Utilities Act, provides an opportunity for stakeholders to conduct their own review of ISO rules and propose amendments without imposing any time limits or fixed terms. |
| 3 | whether you understand and agree with the objective or purpose of proposed new ISO rule Section 502.7, *Load Facility Technical Requirements* and whether, in your view, the proposed new ISO rule Section 502.7, Load Facility Technical Requirements meets the objective or purpose | **AltaLink Management Ltd. ("AltaLink")**<br>3. AltaLink understands and agrees with the objective of the proposed ISO rule Section 502.7, Load Facility Technical Requirements and believes this proposed document would meet that objective. | The AESO acknowledges AltaLink's comment. |
| 4 | how, in your view, proposed new ISO rule Section 502.7, *Load Facility Technical Requirements* affects the performance of the capacity market and the electricity market | **AltaLink Management Ltd. ("AltaLink")**<br>4. Please see AltaLink's response to Item #1. | The AESO acknowledges AltaLink's comment. |
| 5 | your views on any analysis conducted or commissioned by the AESO supporting proposed new ISO rule Section 502.7, *Load Facility Technical Requirements* | **AltaLink Management Ltd. ("AltaLink")**<br>5. AltaLink and other industry stakeholders were involved in the development of the new ISO rule Section 502.7, Load Facility Technical Requirements, and AltaLink believes the analysis was appropriate. | The AESO acknowledges AltaLink's comment. |
| 6 | whether you agree with proposed new ISO rule Section 502.7, Load Facility Technical Requirements taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market | **AltaLink Management Ltd. ("AltaLink")**<br>6. AltaLink agrees that the proposed new ISO rule Section 502.7, *Load Facility Technical Requirements* taken together with all ISO rules is supportive of a fair, efficient, and openly competitive market if AltaLink's comments on Item #1 and clarifications discussed on Item #7 are addressed. | The AESO acknowledges AltaLink's comment. |

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| 7 | whether you would suggest any alternatives to proposed new ISO rule Section 502.7, *Load Facility Technical Requirements* | **AltaLink Management Ltd. ("AltaLink")**<br><br>7. AltaLink identifies below areas where clarity is required and has proposed some changes to the new ISO rule Section 502.7, Load Facility Technical Requirements document:<br><br>a. Regarding Section 5(1)(d), AltaLink requests the AESO clarify the calculation for an increase in the phase-to-phase voltage imbalance caused by a load facility addition is limited to 1% of the pre-existing voltage imbalance level (prior to the load facility addition). For example, if the prior voltage imbalance level was measured to be 1.0%, a load facility addition could only result in an increase to 1.01%, not an addition of 1%, to 2.0%, which could put the transmission facility to be in non-compliance with the rule.<br><br>AltaLink recommends Section 5(1)(d) be re-worded to: "The phase-to-phase voltage unbalance measured after a load facility project addition must not increase by more than 1% of the voltage unbalance level measured prior to the load addition, where the phase to phase voltage unbalances are measured based on normal operating conditions for 95% of the time over any continuous 7 day measurement period, calculated in accordance with the following formula:…"<br><br>b. With the combination of Sections 5(1)(d) and 5(1)(e), Section 5(1)(f) needs to be renamed 5(1)(e).<br><br>c. Regarding Section 6, as the transmission facility can include medium voltage facilities within transmission substations that are commonly not designed to be effectively grounded, AltaLink recommends adjusting the wording to clarify that it is the bulk electric system (BES) that is effectively grounded, not the entire transmission system.<br><br>AltaLink recommends the wording be changed to provide this clarity: "The legal owner of a load facility or the legal owner of a transmission facility must design the load facility and the transmission facility to which the load facility is connected so | a. The AESO notes the recommended changes, and proposes to make amendments to subsection 5(1)(d), as follows:<br><br>**5(1)(d)** the increase of ~~difference between~~ the phase-to-phase voltage ~~unbalances~~ unbalance ~~before and after~~ caused by the load facility project must not ~~increase by more than~~ exceed 1%, where the phase-to-phase voltage ~~unbalances~~ unbalance ~~are~~ is measured based on normal operating conditions for 95% of the time over any continuous 7 **day** measurement period, calculated in accordance with the following formula:<br><br>$$\text{Voltage unbalance} = \frac{\text{Negative sequence voltage component}}{\text{Positive sequence voltage component}} \times 100\%$$<br><br>b. The AESO will correct the numbering in subsection 5(1).<br><br>c. The AESO is of the opinion that the proposed language is technically correct. The AESO is developing an information document in relation to Section 502.7 and will add a section in that information document to address AltaLink's concern. |

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| | | that the bulk electric system (BES) operates as an effectively grounded system".<br><br>**ATCO Electric Ltd. ("ATCO")**<br><br>8. In regards to section: 5(1)(a)(iii) The 99% probability for Pst is usually applied with a multiplier between 1 and 1.5 because it may be difficult to meet; yet, the AESO is applying the tighter end of the range. Why is AESO applying a tighter value?<br><br>General comment: AESO is aligning its requirement with IEC 61000-3-7; I would have expected it to align with the CSA version CSA 61000-3-7. These two are identical, but the CSA is local. Can AESO please explain why this is? | 8. The AESO is proposing a "tighter value", namely, the application of the 99% probability for $P_{st}$ without a multiplier as the multiplier, if justified, is applied only under transient conditions or during unusual operating conditions (such as start-up), and depends on many factors including the system and equipment characteristics. However, the AESO intends to apply this measurement during normal operating conditions and, therefore, the conditions that would justify a multiplier will not be present. Section 502.1 of the ISO rules, *Aggregated Generating Facilities Technical Requirements*, Section 502.5 of the ISO rules, *Generating Rules Technical Requirements*, and Section 502.13 of the ISO rules, *Battery Energy Storage Facility Technical Requirements* take this same approach.<br><br>The AESO is aligning the requirements of Section 502.7 with IEC 61000-3-7, instead of the CSA version, as such alignment has the benefit that any future changes in IEC 61000-3-7 become effective on a more timely basis. |
| 8 | if the answer to item #1 is yes, whether you agree that proposed new ISO rule Section 502.7, *Load Facility Technical Requirements* supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not | **AltaLink Management Ltd. ("AltaLink")**<br><br>9. Regarding how the new ISO rule relates to the capacity market, please see AltaLink's response to Item #1.<br><br>AltaLink believes the proposed new ISO rule Section 502.7, Load Facility Technical Requirements, is an improvement to its predecessor (Generation and Load Interconnection Standard). The proposed new ISO rule Section 502.7, Load Facility Technical Requirements, set limits and includes requirements consistent with applicable industry standards (ex. IEEE 519 and relevant IEC standards), all which should help ensure an acceptable quality of power is delivered to customers and it will help protect customer equipment from damage. | The AESO acknowledges AltaLink's comment. |

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| 9 | whether you agree that proposed new ISO rule Section 502.7, *Load Facility Technical Requirements* supports the public interest and why or why not | **AltaLink Management Ltd. ("AltaLink")**<br>10. AltaLink agrees the proposed new ISO rule Section 502.7, Load Facility Technical Requirements, supports the public interest as it is an improvement to its predecessor (Generation and Load Interconnection Standard), and sets limits and includes requirements consistent with applicable industry standards (ex. IEEE 519 and relevant IEC standards), all which should help ensure an acceptable quality of power is delivered to customers and it will help protect customer equipment from damage. | The AESO acknowledges AltaLink's comment. |
| 10 | whether you have any additional comments | **AltaLink Management Ltd. ("AltaLink")**<br>11. AltaLink agrees with the proposed definition of "point of common coupling".<br>12. AltaLink does not have any recommendations for additional content that should be included in an information document as the proposed ISO rule Section 502.7, *Load Facility Technical Requirements* is consistent with relevant industry documents. | The AESO acknowledges AltaLink's comments. |