

Proposed Amended ISO rule – Section 501.10, *Transmission Loss Factors*

<b>Date of Request for Comment</b>	2019-01-22		
<b>Period of Comment:</b>	2019-01-22	through	2019-02-06
<b>Comments From:</b>	City of Medicine Hat		

s.	Proposed language	Stakeholder comments	AESO Replies
3(1)	<p><b>Make Loss Factors Publicly Available</b></p> <p><b>3(1)</b> The <b>ISO</b> must make final <b>loss factors</b>, including the dates when each <b>loss factor</b> becomes effective and ceases to be effective, publicly available on the AESO website:</p> <ul style="list-style-type: none"> <li>(a) using reasonable best efforts, no later than the first <b>business day</b> of October prior to the calendar year in which the <b>loss factors</b> will apply; or</li> <li>(b) if the <b>ISO</b> is unable to make final <b>loss factors</b> available by the first <b>business day</b> of October, no later than the last <b>business day</b> of December prior to the calendar year in which the <b>loss factors</b> will apply.</li> </ul>	No comment.	
6(1)	<p>The <b>ISO</b> must calculate <b>loss factors</b> using hourly historical metered volume and <b>merit order</b> data for all <b>source assets</b> connected to the <b>transmission system</b> that are included in the system topologies created in subsection 7 below, for the calendar year for which <b>loss factors</b> are being determined, by:</p> <ul style="list-style-type: none"> <li>(a) using hourly historical data for the calendar year two (2) years prior to the calendar year for which</li> </ul>		

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	<p><b>loss factors</b> are being determined;</p> <p>(b) including, in the following order, the following volumes for each <b>source asset</b>, including for the eleven (11) locations at which hydro <b>generating units</b> on the Bow River system are connected to the <b>transmission system</b>:</p> <ul style="list-style-type: none"> <li>(i) all <b>metered energy</b> for <b>source assets</b> that do not submit price-quantity <b>offers</b> in the energy market;</li> <li>(ii) all dispatched <b>operating blocks</b> for <b>source assets</b> that submit price-quantity <b>offers</b> in the energy market, in <b>merit order</b> first by price and then by size;</li> <li>(iii) all undischarged <b>operating blocks</b> offered in the energy market for <b>source assets</b> that submit price-quantity <b>offers</b> in the energy market, in <b>merit order</b> first by price and then by size;</li> <li>(iv) all volumes for <b>source assets</b> that the <b>ISO</b> accepts for <b>dispatch</b> for <b>contingency reserve</b>, in <b>merit order</b> first by price and then by size; and</li> <li>(v) all <b>available transfer capability</b> which is not scheduled for imports over <b>interties</b>;</li> </ul> <p>(c) incorporating any change to <b>maximum capability</b> or <b>contract capacity</b> associated with a connection project, behind the fence project or contract capacity change project for a <b>source asset</b> included in the historical data by increasing or decreasing the <b>source asset's</b> historical volumes in subsection 6(b) above in proportion to the change in maximum capability or <b>contract capacity</b>, as appropriate;</p>		



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	<p>and</p> <p>(f) excluding any <b>source asset</b> during a <b>month</b> when, for the entirety of that <b>month</b> of the calendar year for which <b>loss factors</b> are being determined:</p> <p>(i) the <b>market participant</b> has notified the <b>ISO</b> that the <b>source asset</b> is planned to be subject to a <b>mothball outage</b>, a <b>planned outage</b> or a similar extended outage; or</p> <p>(ii) the <b>system access service</b> for the <b>source asset</b> is planned to have been terminated.</p>		
<p><b>8(4)</b></p>	<p>The <b>ISO</b> must, unless it is not possible, calculate <b>transmission system</b> losses for an initial state for each hour of the calendar year for which <b>loss factors</b> are being determined, based on:</p> <p>(a) the volumes for <b>metered energy</b> and dispatched <b>operating blocks</b> included in subsections 6(1)(b)(i), 6(1)(b)(ii), and 6(2)(b) above, as applicable, for that hour; and</p> <p>(b) balancing total supply to total load plus <b>transmission system</b> losses in that hour by:</p> <p>(i) increasing the volume for undispached <b>operating blocks</b>, <b>contingency reserve</b> and <b>available transfer capability</b> which is not scheduled from one (1) or more <b>source assets</b>, in the order described in subsection 6(1)(b) above;</p> <p>(ii) where net demand from the <b>transmission system</b> exists at a location where volume from a <b>source asset</b> would be increased in subsection 8(4)(b)(i) above:</p>	<p>Proposed changes to section 8(4) and 8(5) are deficient and further revisions are required to reflect the need to redispatch idle capacity in step with available merit order offer blocks.</p> <p>The deficiency is easily illustrated by the following scenario: Rebalancing requires the redispatch of 12 MW. The first undispached offer in the merit order is a 5 MW offer block belonging to a dual-use site. The dual-use site has an initial condition of 8 MW net-load.</p> <p>Under the proposed language the dual-use site is redispatched so that the metered energy is reduced to net zero (8 MW reduction), then net-supply increased to balance the system (~4 MW net supply). In total, a notional redispatch of behind-the fence generation of 12 MW. However, this language ignores whether the dual-use site is entirely the in-merit marginal generation. In our scenario, the dual-use site is only in-merit for a 5 MW block; at most its net-load should drop 5 MW. The remainder of the redispatch should be sourced from another location.</p> <p>The City submits that modelling dual-use sites on a net-flow basis is inherently problematic. Dual-use sites should be modelled with gross load and gross generation connected at a</p>	<p>The AESO is of the view that the City’s hypothetical scenario misrepresents the operation of a site with load and generation that submits offers on a net supply basis. The City states that because “the dual-use site is only in-merit for a 5 MW block; at most its net-load should drop 5 MW.” However, load is not offered in the merit order at the site; only generation is offered.</p> <p>The City proposes that the issue be resolved by modelling sites with load and generation on a gross offer basis, even when the site submits offers on a net supply basis. Doing so would require the AESO to restate net supply offers such that the merit order would be modified and would no longer be consistent with historical merit orders. The resulting inconsistency with historical merit orders may make it more difficult to compare volumes between the loss factor results and historical data. As well, the AESO also expects that it would need to convert net supply offers to a gross basis in all hours to avoid inconsistency in offer bases between hours, even though many hours may not require dispatch of a net supply offer at a site with load and generation.</p> <p>The AESO accordingly considers its proposed amendment to be a more reasonable and practical approach which will minimize inconsistencies with historical merit orders. Furthermore, the</p>

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	<p>(A) first decreasing the <b>metered energy</b> to load at that location as necessary to balance the system, but by no more than required to reduce net demand to zero (0); and</p> <p>(B) then increasing the volume from the <b>source asset</b> as necessary to balance the system;</p> <p>Or</p> <p>(iii) decreasing the volume for <b>metered energy</b> and dispatched <b>operating blocks</b> in the order described in subsection 6(1)(b) above.</p>	<p>single node. Under this arrangement, dual-use generation can be redispatched, while holding load constant. Moreover, dual-use generation would then be redispatched according to its merit order block per 8(1), without conflict.</p>	<p>proposed amendment will allow the AESO to calculate loss factors for locations with both generation and load, when the location exists as net demand in an hour, that are representative of the impact on average system losses, which is consistent with the requirement of section 31(2)(d) of the <i>Transmission Regulation</i> and consistent with the decisions of the Commission in Proceeding 790.</p>
<p><b>8(5)</b></p>	<p>The <b>ISO</b> must, unless it is not possible, calculate <b>transmission system</b> losses for a redispatched state for each hour of the calendar year for which <b>loss factors</b> are being determined:</p> <p>(a) for each location for <b>system access service</b> provided under Rate STS or Rate IOS, based on:</p> <p>(i) reducing the volume for <b>metered energy</b> or dispatched <b>operating blocks</b> for the location such that net supply to the <b>transmission system</b> is zero (0) while the facilities of the <b>market participant</b> remain connected for the applicable <b>system access service</b>;</p> <p>(ii) increasing the volume for undispached <b>operating blocks, contingency reserve</b> and <b>available transfer capability</b> which is not scheduled from one (1) or more <b>source assets</b>, in the order described in subsection 6(1)(b) above, such that total supply balances the total load plus <b>transmission system</b> losses with the net supply to the</p>	<p>See comments re. 8(4).</p>	<p>Please refer to the AESO's replies to the City's comments above.</p>

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	<p><b>transmission system</b> set to zero (0) for the applicable <b>system access service</b>; and</p> <p>(iii) where net demand from the <b>transmission system</b> exists at a location where volume from a <b>source asset</b> would be increased in subsection 8(5)(a)(ii) above:</p> <p>(A) first decreasing the <b>metered energy</b> to load at that location as necessary to balance the system, but by no more than required to reduce net demand to zero (0); and</p> <p>(B) then increasing the volume from the <b>source asset</b> as necessary to balance the system;</p> <p>and</p> <p>(b) for each location for <b>system access service</b> provided under Rate DOS, based on:</p> <p>(i) reducing the volume for <b>metered energy</b> for the location such that net demand from the <b>transmission system</b> reflects the Rate DTS <b>contract capacity</b> for the applicable <b>system access service</b>;</p> <p>(ii) decreasing the volume for <b>metered energy</b> and dispatched <b>operating blocks</b> from one or more <b>source assets</b>, in the order described in subsection 6(1)(b) above, such that total supply balances the total load plus <b>transmission system</b> losses with the net demand from the <b>transmission system</b> reflecting the Rate DTS <b>contract capacity</b> for the applicable <b>system access service</b>; and</p> <p>(iii) where <b>metered energy</b> to load was</p>		

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	<p>decreased in subsection 8(4)(b)(ii) above at a location where volume from a <b>source asset</b> would be decreased in subsection 8(5)(b)(ii) above:</p> <p>(A) first decreasing the volume from the <b>source asset</b> as necessary to balance the system, but by no more than required to reduce net supply to zero (0); and</p> <p>(B) then increasing the <b>metered energy</b> to load at that location as necessary to balance the system, but by no more than required to increase net demand to its original value.</p>		

Item #		Stakeholder comments	AESO Replies
1	whether you are of the view that amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> relates to the capacity market and why or why not	No	
2	if the answer to item #1 is yes, whether you agree that amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> should or should not be in effect for a fixed term and why or why not	N/A	
3	whether you understand and agree with the objective or purpose of amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> and whether, in your view, Section 501.10, <i>Transmission Loss Factors</i> meets the objective or purpose	The AESO states that the purpose of the proposed amendments to section 8(4) and 8(5) is to allow for the reduction of net demand from dual-use sites when these locations are the marginal in-merit source of supply. The AESO can achieve the redispatch of dual-use supply without conflict by modelling dual-use sites at a single node connecting gross load and gross supply, then redispatch only gross supply (and holding gross load constant). This minor change in the modeling framework would then allow dual-use generation to be redispatched similarly to other locations (per the merit order), without the need to adjust load, and in compliance with the AUC directive to keep load constant.	Please refer to the AESO's replies to the City's comments above.
4	how, in your view, amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> affects the performance of the capacity market and the electricity market		
5	your views on any analysis conducted or commissioned by the AESO supporting amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i>	The AESO provided one simple example in the Notification, without consideration to the conflict its amendment presents with other aspects of the rule. The proposed amendments to 8(4) and 8(5) conflicts with merit order redispatch.	Please refer to the AESO's replies to the City's comments above. The AESO considers its proposed amendment will minimize inconsistencies with historical merit orders.
6	whether you agree with amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> taken together with all ISO rules and in light of the principle of a fair,	Proposed changes to section 8(4) and 8(5) are not aligned with FEOC principles as they create inherent conflicts in the rule.	Please refer to the AESO's replies to the City's comments above. The AESO considers its proposed amendment will minimize inconsistencies with historical merit orders.

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	efficient and openly competitive market		
7	whether you would suggest any alternatives to amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i>	Dual-use sites should be modelled at a single node connecting gross load and gross generation. Any redispatch of dual-use generation should then follow merit order redispatch of the gross generation, holding load constant.	Please refer to the AESO's replies to the City's comments above.
8	if the answer to item #1 is yes, whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	N/A	
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	No. The proposed amendment language conflicts with other parts of the rule.	Please refer to the AESO's replies to the City's comments above. The AESO considers its proposed amendment will minimize inconsistencies with historical merit orders.

Proposed Amended ISO rule – Section 501.10, *Transmission Loss Factors*

<b>Date of Request for Comment</b>	2019-01-22		
<b>Period of Comment:</b>	2019-01-22	through	2019-02-06
<b>Comments From:</b>	Milner Power Inc.		

s.	Proposed language	Stakeholder comments	AESO Replies
3(1)	<p><b>Make Loss Factors Publicly Available</b></p> <p><b>3(1)</b> The <b>ISO</b> must make final <b>loss factors</b>, including the dates when each <b>loss factor</b> becomes effective and ceases to be effective, publicly available on the AESO website:</p> <p>(a) using reasonable best efforts, no later than the first <b>business day</b> of October prior to the calendar year in which the <b>loss factors</b> will apply; or</p> <p>(b) if the <b>ISO</b> is unable to make final <b>loss factors</b> available by the first <b>business day</b> of October, no later than the last <b>business day</b> of December prior to the calendar year in which the <b>loss factors</b> will apply.</p>	<p>Milner believes the changes contemplated in parts (a) and (b) are unnecessary and unhelpful. No rule change is needed for the AESO to advance its own work schedule to make loss factors available on the first business day of October prior to the calendar year in which loss factors will apply. The AESO’s current rule allows the AESO to publish loss factors on a best efforts basis on the first business day of October. The current rule stipulates that the AESO must by the fifth business day in November each year publish loss factors for the following year. There is a reason for this date. The November date was selected in part to enable market participants the opportunity to see the forecast loss factors prior to their proposed implementation date. The AESO’s proposed rule change ignores this goal should the AESO miss its newly proposed October 1 date, which is likely as the AESO has failed consistently to meet its November 5 deadline. If the AESO wishes to impose on itself an October 1 deadline, this is commendable.</p> <p>However, November 5 should remain the final date upon which the AESO is required to file loss factors for the following year, without the AESO seeking indulgence from the MSA.</p>	<p>The AESO considers that the proposed “reasonable best efforts” deadline of the first business day of October provides a clear commitment to publish loss factors early enough to enable market participants to see and act on forecast loss factors before their January 1 implementation date.</p> <p>While the later December deadline minimizes administrative process for the AESO due to unforeseen issues that could cause the AESO to miss the October deadline, the AESO acknowledges that the last business day of December would restrict the time available for market participants to see and act on forecast loss factors. The AESO will accordingly revise the proposed amendment to advance the December deadline to the first business day of December, as follows (revision underlined):</p> <p>(b) if the <b>ISO</b> is unable to make final <b>loss factors</b> available by the first <b>business day</b> of October, no later than the <u>first business day</u> of December prior to the calendar year in which the <b>loss factors</b> will apply.</p>
6(1)	<p>The <b>ISO</b> must calculate <b>loss factors</b> using hourly historical metered volume and <b>merit order</b> data for all <b>source assets</b> connected to the <b>transmission system</b> that are included in the system topologies created in subsection 7 below, for the</p>	<p>The provisions in 6(1)(d) and 6 (1)(e) are inadequate.</p> <p>The proposed revision to 6(1)(d) provides for “an opportunity for the legal owner of the source asset to review and</p>	<p>The AESO is of the view that allowing a market participant an opportunity to review and comment on the basis of the AESO’s determination of volumes that are not otherwise prescribed in the</p>

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	<p>calendar year for which <b>loss factors</b> are being determined, by:</p> <ul style="list-style-type: none"> <li>(a) using hourly historical data for the calendar year two (2) years prior to the calendar year for which <b>loss factors</b> are being determined;</li> <li>(b) including, in the following order, the following volumes for each <b>source asset</b>, including for the eleven (11) locations at which hydro <b>generating units</b> on the Bow River system are connected to the <b>transmission system</b>: <ul style="list-style-type: none"> <li>(i) all <b>metered energy</b> for <b>source assets</b> that do not submit price-quantity <b>offers</b> in the energy market;</li> <li>(ii) all dispatched <b>operating blocks</b> for <b>source assets</b> that submit price-quantity <b>offers</b> in the energy market, in <b>merit order</b> first by price and then by size;</li> <li>(iii) all undischarged <b>operating blocks</b> offered in the energy market for <b>source assets</b> that submit price-quantity <b>offers</b> in the energy market, in <b>merit order</b> first by price and then by size;</li> <li>(iv) all volumes for <b>source assets</b> that the <b>ISO</b> accepts for <b>dispatch</b> for <b>contingency reserve</b>, in <b>merit order</b> first by price and then by size; and</li> <li>(v) all <b>available transfer capability</b> which is not scheduled for imports over <b>interties</b>;</li> </ul> </li> <li>(c) incorporating any change to <b>maximum capability</b> or <b>contract capacity</b> associated with a connection project, behind the fence project or contract capacity change project for a <b>source asset</b> included in the historical data by increasing</li> </ul>	<p>comment on the basis for the adjusted volumes”. The proposed revision to 6(1)(e) provides the legal owner of the new source asset an opportunity to review and comment on the basis for the hourly data profile only if no source asset of the same technology is owned by any market participant in the historical data.</p> <p>As Milner has noted previously, the proposed amendments to 6(1)(d) and 6(1)(e) will apply to very few generators in any year. In the past, when tasked with forecasting volumes for new generators the ISO has consistently over-forecast generation, often to the detriment of the affected generators. Since the assumptions made can materially impact the loss factors assigned to the targeted generator, it is imperative that the assumptions of timing, magnitude of increased or decreased capacity, and the anticipated offers associated with any anticipated change in capacity, be determined by the <i>owners</i> of the affected source assets who are the best informed regarding the expected operation of their assets.</p> <p>Unless the ISO can establish that the respective owner's expectations are unreasonable, there is no basis for the ISO to utilize data concerning the timing of and magnitude of changes in capacity and offers associated with any changes, other than the data of the respective owner.</p> <p>The obligation must remain with the AESO to use the hourly data profile provided by the legal owner unless the AESO can demonstrate that the owner's data is unreasonable. If the ISO does not utilize a data profile provided by the legal owner of the asset, the ISO must provide the reasons it did not do so and provide the basis on which it created the data profile.</p> <p>It is also necessary that the AESO recognize that the legal owner cannot be considered bound by the offer data provided to the ISO. Any and all legal owners are expected to vary actual <b>source asset</b> operation in response to prevailing market prices and conditions, which will obviously vary from</p>	<p>rule is a reasonable provision.</p> <p>The AESO considers it reasonable, in the limited instances where <b>the use of</b> historical data would not be appropriate, that the AESO adjust historical data through a consistent and objective approach applied to any affected generating unit. The market participant will have the opportunity to make the AESO aware of any unusual circumstances that apply to its generating unit and the AESO will take that information into account when adjusting historical data appropriately for the forecast year.</p> <p>The AESO notes that existing provisions of the rule utilize objective historical data for generating units in a forecast year, with no opportunity for a market participant to argue for variance from that historical data. Allowing a market participant full subjective discretion regarding the data to be used for a forecast year is inconsistent with those existing provisions.</p> <p>The AESO further considers that its role as independent operator of the transmission system places it in an appropriate position to determine volumes for affected generating units, having regard for the interaction of all factors that may affect such volumes.</p>

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	<p>or decreasing the <b>source asset</b>'s historical volumes in subsection 6(b) above in proportion to the change in maximum capability or <b>contract capacity</b>, as appropriate;</p> <p>(d) incorporating any return to service for a <b>source asset</b> that was subject to a <b>mothball outage</b>, a <b>planned outage</b> or a similar extended outage for one entire <b>month</b> or longer during the historical year, by the <b>ISO</b> reasonably adjusting the historical volumes of the <b>source asset</b> for the months affected by the <b>mothball outage</b>, <b>planned outage</b> or similar extended outage in the historical year, following an opportunity for the <b>legal owner</b> of the <b>source asset</b> to review and comment on the basis for the adjusted volumes;</p> <p>(e) incorporating any new <b>source asset</b> not included in the historical data but which has an expected in-service date by the end of the calendar year for which <b>loss factors</b> are being determined, by assigning such new <b>source asset</b> an hourly data profile after its expected in-service date reflecting the hourly data profile that is, for the same period:</p> <ul style="list-style-type: none"> <li>(i) the average of all <b>source assets</b> of the same technology owned by the same <b>market participant</b> in the historical data;</li> <li>(ii) if no <b>source asset</b> of the same technology is owned by the same <b>market participant</b> in the historical data, the average of all <b>source assets</b> of the same technology owned by any <b>market participant</b> in the historical data; and</li> <li>(iii) if no <b>source asset</b> of the same technology is owned by any <b>market participant</b> in the historical data, determined by the <b>ISO</b> after the <b>legal owner</b> of the new <b>source asset</b></li> </ul>	<p>forecast prices and conditions.</p>	

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	<p>has been provided an opportunity to review and comment on the basis for the hourly data profile.</p> <p>and</p> <p>(f) excluding any <b>source asset</b> during a <b>month</b> when, for the entirety of that <b>month</b> of the calendar year for which <b>loss factors</b> are being determined:</p> <p>(i) the <b>market participant</b> has notified the <b>ISO</b> that the <b>source asset</b> is planned to be subject to a <b>mothball outage</b>, a <b>planned outage</b> or a similar extended outage; or</p> <p>(ii) the <b>system access service</b> for the <b>source asset</b> is planned to have been terminated.</p>		
8(4)	<p>The <b>ISO</b> must, unless it is not possible, calculate <b>transmission system</b> losses for an initial state for each hour of the calendar year for which <b>loss factors</b> are being determined, based on:</p> <p>(a) the volumes for <b>metered energy</b> and dispatched <b>operating blocks</b> included in subsections 6(1)(b)(i), 6(1)(b)(ii), and 6(2)(b) above, as applicable, for that hour; and</p> <p>(b) balancing total supply to total load plus <b>transmission system</b> losses in that hour by:</p> <p>(i) increasing the volume for undischarged <b>operating blocks, contingency reserve</b> and <b>available transfer capability</b> which is not scheduled from one (1) or more <b>source assets</b>, in the order described in subsection 6(1)(b) above;</p> <p>(ii) where net demand from the <b>transmission</b></p>	<p>Milner understands and agrees with the proposed changes to Sections 8(4) and 8(5).</p>	<p>The AESO acknowledges Milner's support.</p>

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	<p><b>system</b> exists at a location where volume from a <b>source asset</b> would be increased in subsection 8(4)(b)(i) above:</p> <p>(A) first decreasing the <b>metered energy</b> to load at that location as necessary to balance the system, but by no more than required to reduce net demand to zero (0); and</p> <p>(B) then increasing the volume from the <b>source asset</b> as necessary to balance the system;</p> <p>Or</p> <p>(iii) decreasing the volume for <b>metered energy</b> and dispatched <b>operating blocks</b> in the order described in subsection 6(1)(b) above.</p>		
8(5)	<p>The <b>ISO</b> must, unless it is not possible, calculate <b>transmission system</b> losses for a redispatched state for each hour of the calendar year for which <b>loss factors</b> are being determined:</p> <p>(a) for each location for <b>system access service</b> provided under Rate STS or Rate IOS, based on:</p> <p>(i) reducing the volume for <b>metered energy</b> or dispatched <b>operating blocks</b> for the location such that net supply to the <b>transmission system</b> is zero (0) while the facilities of the <b>market participant</b> remain connected for the applicable <b>system access service</b>;</p> <p>(ii) increasing the volume for undispached <b>operating blocks, contingency reserve</b> and <b>available transfer capability</b> which is not scheduled from one (1) or more <b>source assets</b>, in the order described in subsection</p>		

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	<p>6(1)(b) above, such that total supply balances the total load plus <b>transmission system</b> losses with the net supply to the <b>transmission system</b> set to zero (0) for the applicable <b>system access service</b>; and</p> <p>(iii) where net demand from the <b>transmission system</b> exists at a location where volume from a <b>source asset</b> would be increased in subsection 8(5)(a)(ii) above:</p> <p>(A) first decreasing the <b>metered energy</b> to load at that location as necessary to balance the system, but by no more than required to reduce net demand to zero (0); and</p> <p>(B) then increasing the volume from the <b>source asset</b> as necessary to balance the system;</p> <p>and</p> <p>(b) for each location for <b>system access service</b> provided under Rate DOS, based on:</p> <p>(i) reducing the volume for <b>metered energy</b> for the location such that net demand from the <b>transmission system</b> reflects the Rate DTS <b>contract capacity</b> for the applicable <b>system access service</b>;</p> <p>(ii) decreasing the volume for <b>metered energy</b> and dispatched <b>operating blocks</b> from one or more <b>source assets</b>, in the order described in subsection 6(1)(b) above, such that total supply balances the total load plus <b>transmission system</b> losses with the net demand from the <b>transmission system</b> reflecting the Rate DTS <b>contract capacity</b> for the applicable <b>system access service</b>;</p>		

s.	Proposed language	Stakeholder comments	AESO Replies
	<p>and</p> <p>(iii) where <b>metered energy</b> to load was decreased in subsection 8(4)(b)(ii) above at a location where volume from a <b>source asset</b> would be decreased in subsection 8(5)(b)(ii) above:</p> <p>(A) first decreasing the volume from the <b>source asset</b> as necessary to balance the system, but by no more than required to reduce net supply to zero (0); and</p> <p>(B) then increasing the <b>metered energy</b> to load at that location as necessary to balance the system, but by no more than required to increase net demand to its original value.</p>		

Item #		Stakeholder comments	AESO Replies
1	whether you are of the view that amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> relates to the capacity market and why or why not	No this amendment relates to an existing rule that is independent of the capacity market.	The AESO acknowledges Milner's comment.
2	if the answer to item #1 is yes, whether you agree that amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> should or should not be in effect for a fixed term and why or why not	N/A	
3	whether you understand and agree with the objective or purpose of amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> and whether, in your view, Section 501.10, <i>Transmission Loss Factors</i> meets the objective or purpose	<p>Milner understands and agrees with the proposed changes to Sections 8(4) and 8(5).</p> <p>Milner understands but does not agree with the proposed changes to Section 6(1)(d) and 6(1)(e). Milner asks that the ISO consider Milner's above comments on the proposed changes to Section 6(1)(d) and 6(1)(e) in addition to the following comments.</p> <p>The proposed amendments to 6(1)(d) and 6(1)(e) will apply to very few generators in any year. In the past, when charged with forecasting volumes for new generators the ISO has over-forecast generation, often to the detriment of the affected generators. Since the assumptions made by the ISO can materially impact the loss factors assigned to the targeted generators, it is imperative that the assumptions of timing and magnitude of increased or decreased capacity and the anticipated offers associated with any anticipated change in capacity, be determined by the owners of the affected source assets, who are the best informed regarding the expected operation of their assets.</p> <p>Unless the ISO can establish the affected ,owner's expectations are unreasonable there is no basis for the ISO to utilize data for the timing of and magnitude of changes in capacity and offers associated with any changes other than the expectations of the</p>	Please refer to the AESO's replies to Milner's comments above.

Item #		Stakeholder comments	AESO Replies
		<p>affected owner..</p> <p>The obligation must rest with the AESO to use the hourly data profile provided by the legal owner unless the AESO can demonstrate the data's unreasonableness. If the ISO does not utilize a data profile provided by the legal owner of the asset the ISO must provide the reasons it did not do so and provide the basis on which it created the data profile sufficient to enable the owner to replicate and test the ISO's assumptions and conclusions. It is necessary that the AESO recognize that actual market prices and conditions will vary from forecast prices and conditions and that the legal owner, as with all other legal owners cannot be bound by the forecast offer data provided to the ISO. As with all legal owners, the affected legal owner is expected to vary source asset operation in response to prevailing market prices and conditions.</p> <p>Milner understands but does not agree with the proposed changes to Section 3(1). Please see Milner's comments regarding the ISO's proposed changes to Section 3(1) above, in addition to the following comments.</p> <p>In Milner's view, the proposed changes to Section 3(1) are both unnecessary and counterproductive. No rule change is needed for the AESO to advance its work schedule to make loss factors available on the first business day of October prior to the calendar year in which loss factors will apply.</p> <p>The current rule stipulates that the AESO must by the fifth business day in November each year publish loss factors for the following year. Yet, even with this stipulation, the AESO has been unsuccessful in any of the last three years to even publish loss factors for the following year by the last business day in December (as proposed). The goal of the AESO's rules should be to incite the AESO to comply with its rules, not reduce the AESO's administrative "burden" when it fails to comply.</p>	

Item #		Stakeholder comments	AESO Replies
4	how, in your view, amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> affects the performance of the capacity market and the electricity market	By incorporating the inputs of legal owners the AESO enhances the performance of the electricity market by more accurately calculating what future loss factor charges and credits will be to various stakeholders.	Please refer to the AESO's replies to Milner's comments above.
5	your views on any analysis conducted or commissioned by the AESO supporting amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i>	The AESO has not provided any analysis of the impact of these amendments on loss factors applied to individual generators.	The AESO acknowledges Milner's comment.
6	whether you agree with amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	<p>Milner understands and agrees with the proposed changes to Sections 8(4) and 8(5).</p> <p>Milner understands but does not agree with the proposed changes to Section 6(1)(d) and 6 (1)(e).</p> <p>Milner understands but does not agree with the proposed changes to Section 3(1).</p>	The AESO acknowledges Milner's comments.
7	whether you would suggest any alternatives to amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i>	<p>Milner suggests that the amendments to Sections 8 (4) and 8 (5) be implemented.</p> <p>Milner suggests that Sections 6(1) (d) be amended to</p> <p>(d) incorporating any return to service for a <b>source asset</b> that was subject to a <b>mothball outage</b>, a <b>planned outage</b> or a similar extended outage for one entire <b>month</b> or longer during the historical year, by the <b>ISO</b> adjusting the historical volumes of the <b>source asset</b> for the months affected by the <b>mothball outage, planned outage</b> or similar extended outage in the historical year, using the hourly data profile provided by the <b>legal owner</b> unless the AESO can show the data profile is unreasonable. If the ISO does not utilize a data profile provided by the <b>legal owner</b> of the asset the <b>ISO</b> must provide the reasons it did not do so and provide the basis on which it created the data profile. The <b>legal owner</b> is not bound by the assumed offer data provided to the <b>ISO</b> and the <b>legal owner</b> is expected to vary <b>source asset</b></p>	Please refer to the AESO's replies to Milner's comments above.

Item #		Stakeholder comments	AESO Replies
		<p>operation in response to prevailing market prices and conditions.</p> <p>Milner suggests that Sections 6(1) (e) be amended to</p> <p>(e) incorporating any new <b>source asset</b> not included in the historical data but which has an expected in-service date by the end of the calendar year for which <b>loss factors</b> are being determined, by assigning such new <b>source asset</b> an hourly data profile after its expected in-service date reflecting the hourly data profile provided by the <b>legal owner</b> unless the AESO can show the data profile is unreasonable. If the ISO does not utilize a data profile provided by the <b>legal owner</b> of the asset the <b>ISO</b> must provide the reasons it did not do so and provide the basis on which it created the data profile. The <b>legal owner</b> is not bound by the assumed offer data provided to the <b>ISO</b> and the <b>legal owner</b> is expected to vary <b>source asset</b> operation in response to prevailing market prices and conditions.</p> <p>Milner suggests that no changes be made to existing rule Section 3(1). The AESO should adjust their work processes and schedules to ensure that final loss factors for the following year can be published <u>no later than</u> the fifth business day of November prior to the year in which the Loss Factors apply.</p>	
8	if the answer to item #1 is yes, whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	N/A	
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	N/A	

Proposed Amended ISO rule – Section 501.10, *Transmission Loss Factors*

<b>Date of Request for Comment</b>	2019-01-22		
<b>Period of Comment:</b>	2019-01-22	through	2019-02-06
<b>Comments From:</b>	Powerex		

s.	Proposed language	Stakeholder comments	AESO Replies
3(1)	<p><b>Make Loss Factors Publicly Available</b></p> <p><b>3(1)</b> The <b>ISO</b> must make final <b>loss factors</b>, including the dates when each <b>loss factor</b> becomes effective and ceases to be effective, publicly available on the AESO website:</p> <p>(a) using reasonable best efforts, no later than the first <b>business day</b> of October prior to the calendar year in which the <b>loss factors</b> will apply; or</p> <p>(b) if the <b>ISO</b> is unable to make final <b>loss factors</b> available by the first <b>business day</b> of October, no later than the last <b>business day</b> of December prior to the calendar year in which the <b>loss factors</b> will apply.</p>	<p>The AESO states that the rationale for the proposed amendment to subsection 3(1) is that the November deadline for the publication of loss factors, established in the current rule, does not allow it to address any issues prior to year-end. As such, it proposes moving the publication date forward.</p> <p>Powerex has no objection to moving the publication date forward, however, Powerex does not think the proposed amendment to subsection 3(1) is required in order to enable this. That is, the flexibility the AESO is seeking with the proposed amendment to subsection 3(1)(a) is already present in the current rule which already allows the AESO to publish loss factors on a best efforts basis on the first business day of October prior to the calendar year in which loss factors will apply. As such, no rule change is required to enable the AESO to advance its work schedule to make loss factors available earlier – in October or any other earlier date.</p> <p>Powerex has concerns with respect to the proposed amendment to subsection in 3(1)(b) and is of the view that the November deadline, as established in the current rule, should be maintained.</p> <p>The current rule stipulates that the AESO must publish loss factors for the following year by the fifth business day in November each year. As above, the AESO’s rationale for the proposed amendment to subsection 3(1) is to provide the AESO with more time to address any issues with respect to</p>	<p>The AESO considers that the proposed “reasonable best efforts” deadline of the first business day of October provides a clear commitment to publish loss factors early enough to enable market participants to see and act on forecast loss factors before their January 1 implementation date.</p> <p>While the later December deadline minimizes administrative process for the AESO due to unforeseen issues that could cause the AESO to miss the October deadline, the AESO acknowledges that the last business day of December would restrict the time available for market participants to see and act on forecast loss factors. The AESO will accordingly revise the proposed amendment to advance the December deadline to the first business day of December, as follows (revision underlined):</p> <p>(b) if the <b>ISO</b> is unable to make final <b>loss factors</b> available by the first <b>business day</b> of October, no later than the <u>first business day</u> of December prior to the calendar year in which the <b>loss factors</b> will apply.</p> <p>The AESO further considers that an initial deadline of the first business day of October would allow some opportunity for market participants to identify possible errors in the calculation of loss factors and a possible remedy before the later deadline of the first business day of December.</p>

s.	Proposed language	Stakeholder comments	AESO Replies
		<p>the loss factors, if any arise. Yet a publication date of the last business day in December would seem to be at cross-purposes to the AESO's stated purpose, as it would leave no time for market participants and the AESO to address any potential issues.</p> <p>Powerex strongly suggests that the November deadline be maintained in order to facilitate the opportunity for market participants to identify possible errors in the calculation of the loss factors. This would allow for a possible remedy before the operating horizon of the new loss factors (i.e., January 1 of the following year).</p>	
6(1)	<p>The <b>ISO</b> must calculate <b>loss factors</b> using hourly historical metered volume and <b>merit order</b> data for all <b>source assets</b> connected to the <b>transmission system</b> that are included in the system topologies created in subsection 7 below, for the calendar year for which <b>loss factors</b> are being determined, by:</p> <ul style="list-style-type: none"> <li>(a) using hourly historical data for the calendar year two (2) years prior to the calendar year for which <b>loss factors</b> are being determined;</li> <li>(b) including, in the following order, the following volumes for each <b>source asset</b>, including for the eleven (11) locations at which hydro <b>generating units</b> on the Bow River system are connected to the <b>transmission system</b>: <ul style="list-style-type: none"> <li>(i) all <b>metered energy</b> for <b>source assets</b> that do not submit price-quantity <b>offers</b> in the energy market;</li> <li>(ii) all dispatched <b>operating blocks</b> for <b>source assets</b> that submit price-quantity <b>offers</b> in the energy market, in <b>merit order</b> first by price and then by size;</li> <li>(iii) all undispached <b>operating blocks</b> offered</li> </ul> </li> </ul>		

s.	Proposed language	Stakeholder comments	AESO Replies
	<p>in the energy market for <b>source assets</b> that submit price-quantity <b>offers</b> in the energy market, in <b>merit order</b> first by price and then by size;</p> <p>(iv) all volumes for <b>source assets</b> that the <b>ISO</b> accepts for <b>dispatch</b> for <b>contingency reserve</b>, in <b>merit order</b> first by price and then by size; and</p> <p>(v) all <b>available transfer capability</b> which is not scheduled for imports over <b>interties</b>;</p> <p>(c) incorporating any change to <b>maximum capability</b> or <b>contract capacity</b> associated with a connection project, behind the fence project or contract capacity change project for a <b>source asset</b> included in the historical data by increasing or decreasing the <b>source asset's</b> historical volumes in subsection 6(b) above in proportion to the change in maximum capability or <b>contract capacity</b>, as appropriate;</p> <p>(d) incorporating any return to service for a <b>source asset</b> that was subject to a <b>mothball outage</b>, a <b>planned outage</b> or a similar extended outage for one entire <b>month</b> or longer during the historical year, by the <b>ISO</b> reasonably adjusting the historical volumes of the <b>source asset</b> for the months affected by the <b>mothball outage</b>, <b>planned outage</b> or similar extended outage in the historical year, following an opportunity for the <b>legal owner</b> of the <b>source asset</b> to review and comment on the basis for the adjusted volumes;</p> <p>(e) incorporating any new <b>source asset</b> not included in the historical data but which has an expected in-service date by the end of the calendar year for which <b>loss factors</b> are being determined, by assigning such new <b>source asset</b> an hourly data</p>		

s.	Proposed language	Stakeholder comments	AESO Replies
	<p>profile after its expected in-service date reflecting the hourly data profile that is, for the same period:</p> <ul style="list-style-type: none"> <li>(i) the average of all <b>source assets</b> of the same technology owned by the same <b>market participant</b> in the historical data;</li> <li>(ii) if no <b>source asset</b> of the same technology is owned by the same <b>market participant</b> in the historical data, the average of all <b>source assets</b> of the same technology owned by any <b>market participant</b> in the historical data; and</li> <li>(iii) if no <b>source asset</b> of the same technology is owned by any <b>market participant</b> in the historical data, determined by the <b>ISO</b> after the <b>legal owner</b> of the new <b>source asset</b> has been provided an opportunity to review and comment on the basis for the hourly data profile.</li> </ul> <p>and</p> <ul style="list-style-type: none"> <li>(f) excluding any <b>source asset</b> during a <b>month</b> when, for the entirety of that <b>month</b> of the calendar year for which <b>loss factors</b> are being determined: <ul style="list-style-type: none"> <li>(i) the <b>market participant</b> has notified the <b>ISO</b> that the <b>source asset</b> is planned to be subject to a <b>mothball outage</b>, a <b>planned outage</b> or a similar extended outage; or</li> <li>(ii) the <b>system access service</b> for the <b>source asset</b> is planned to have been terminated.</li> </ul> </li> </ul>		
8(4)	The <b>ISO</b> must, unless it is not possible, calculate <b>transmission system</b> losses for an initial state for each hour		

s.	Proposed language	Stakeholder comments	AESO Replies
	<p>of the calendar year for which <b>loss factors</b> are being determined, based on:</p> <ul style="list-style-type: none"> <li>(a) the volumes for <b>metered energy</b> and dispatched <b>operating blocks</b> included in subsections 6(1)(b)(i), 6(1)(b)(ii), and 6(2)(b) above, as applicable, for that hour; and</li> <li>(b) balancing total supply to total load plus <b>transmission system</b> losses in that hour by: <ul style="list-style-type: none"> <li>(i) increasing the volume for undischpatched <b>operating blocks, contingency reserve</b> and <b>available transfer capability</b> which is not scheduled from one (1) or more <b>source assets</b>, in the order described in subsection 6(1)(b) above;</li> <li>(ii) where net demand from the <b>transmission system</b> exists at a location where volume from a <b>source asset</b> would be increased in subsection 8(4)(b)(i) above: <ul style="list-style-type: none"> <li>(A) first decreasing the <b>metered energy</b> to load at that location as necessary to balance the system, but by no more than required to reduce net demand to zero (0); and</li> <li>(B) then increasing the volume from the <b>source asset</b> as necessary to balance the system;</li> </ul> </li> </ul> <p>Or</p> <li>(iii) decreasing the volume for <b>metered energy</b> and dispatched <b>operating blocks</b> in the order described in subsection 6(1)(b) above.</li> </li></ul>		
8(5)	The <b>ISO</b> must, unless it is not possible, calculate <b>transmission system</b> losses for a redispatched state for		

s.	Proposed language	Stakeholder comments	AESO Replies
	<p>each hour of the calendar year for which <b>loss factors</b> are being determined:</p> <ul style="list-style-type: none"> <li>(a) for each location for <b>system access service</b> provided under Rate STS or Rate IOS, based on:               <ul style="list-style-type: none"> <li>(i) reducing the volume for <b>metered energy</b> or dispatched <b>operating blocks</b> for the location such that net supply to the <b>transmission system</b> is zero (0) while the facilities of the <b>market participant</b> remain connected for the applicable <b>system access service</b>;</li> <li>(ii) increasing the volume for undispached <b>operating blocks, contingency reserve</b> and <b>available transfer capability</b> which is not scheduled from one (1) or more <b>source assets</b>, in the order described in subsection 6(1)(b) above, such that total supply balances the total load plus <b>transmission system</b> losses with the net supply to the <b>transmission system</b> set to zero (0) for the applicable <b>system access service</b>; and</li> <li>(iii) where net demand from the <b>transmission system</b> exists at a location where volume from a <b>source asset</b> would be increased in subsection 8(5)(a)(ii) above:                   <ul style="list-style-type: none"> <li>(A) first decreasing the <b>metered energy</b> to load at that location as necessary to balance the system, but by no more than required to reduce net demand to zero (0); and</li> <li>(B) then increasing the volume from the <b>source asset</b> as necessary to balance the system;</li> </ul> </li> </ul> </li> </ul>		

s.	Proposed language	Stakeholder comments	AESO Replies
	<p>and</p> <p>(b) for each location for <b>system access service</b> provided under Rate DOS, based on:</p> <p>(i) reducing the volume for <b>metered energy</b> for the location such that net demand from the <b>transmission system</b> reflects the Rate DTS <b>contract capacity</b> for the applicable <b>system access service</b>;</p> <p>(ii) decreasing the volume for <b>metered energy</b> and dispatched <b>operating blocks</b> from one or more <b>source assets</b>, in the order described in subsection 6(1)(b) above, such that total supply balances the total load plus <b>transmission system</b> losses with the net demand from the <b>transmission system</b> reflecting the Rate DTS <b>contract capacity</b> for the applicable <b>system access service</b>; and</p> <p>(iii) where <b>metered energy</b> to load was decreased in subsection 8(4)(b)(ii) above at a location where volume from a <b>source asset</b> would be decreased in subsection 8(5)(b)(ii) above:</p> <p>(A) first decreasing the volume from the <b>source asset</b> as necessary to balance the system, but by no more than required to reduce net supply to zero (0); and</p> <p>(B) then increasing the <b>metered energy</b> to load at that location as necessary to balance the system, but by no more than required to increase net demand to its original value.</p>		

s.	Proposed language	Stakeholder comments	AESO Replies

Item #		Stakeholder comments	AESO Replies
1	whether you are of the view that amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> relates to the capacity market and why or why not	Powerex believes the amended ISO Rule relates to an existing Rule, and that this Rule is independent of the capacity market.	The AESO acknowledges Powerex’s comments.
2	if the answer to item #1 is yes, whether you agree that amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> should or should not be in effect for a fixed term and why or why not		
3	whether you understand and agree with the objective or purpose of amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> and whether, in your view, Section 501.10, <i>Transmission Loss Factors</i> meets the objective or purpose	<p>See above. The proposed amendments to subsection 3(1) are unnecessary. No amendments are required in order to enable the AESO to advance its work schedule and make loss factors available earlier. The AESO’s current rule already allows for this flexibility.</p> <p>Additionally, Powerex strongly suggests that the November deadline, as established in the current rule, be maintained if any ability on the part of market participants to identify possible errors in the calculation of the loss factors is going to be facilitated. This date, if met by the AESO, should allow for the identification of issues and a possible remedy before the operating horizon of the new loss factors (i.e., January 1 of the following year). A publication date of the last business day in December would leave no time for market participants and the AESO to identify and address any potential issues.</p>	Please refer to the AESO’s replies to Powerex’s comments above.
4	how, in your view, amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> affects the performance of the capacity market and the electricity market		
5	your views on any analysis conducted or commissioned by the AESO supporting amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i>		

Item #		Stakeholder comments	AESO Replies
6	whether you agree with amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	As noted above, Powerex does not agree with the proposed amendments to subsection 3(1) – they are unnecessary and the current wording in subsection 3(1) of the rule should be maintained.	Please refer to the AESO’s replies to Powerex’s comments above.
7	whether you would suggest any alternatives to amended ISO rule – Section 501.10, <i>Transmission Loss Factors</i>	Powerex suggests that no changes be made to existing rule Section 3(1). The AESO should adjust its work processes and schedules to ensure that final loss factors for the following year can be published <i>no later than</i> the fifth business day of November prior to the year in which the Loss Factors apply.	Please refer to the AESO’s replies to Powerex’s comments above.
8	if the answer to item #1 is yes, whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not		
9	whether you agree that the proposed provisional rule supports the public interest and why or why not		