Stakeholder Comment & AESO Response Form

2008 Loss Factor Base Case Review
November 2, 2007

Date of Comment: November 02, 2007
AESO Response: December 18, 2007

AESO Loss Factor Rules

TCE Concern	AESO Response
1. TransCanada does not agree with modelling the new generators Valleyview, Northern Prairie Power Project and EPCOR Cloverbar project as base loaded generators when they are clearly peaking plants. This incorrect modeling of the new generators has resulted in increased generator loss factors of 1.5% to 6.3% from 2007 to 2008 which will be reversed in the future once historical information is available on these generators. We recommend that the AESO model Valleyview, Northern Prairie Power Project and EPCOR Cloverbar as peaking plants using the best available statistics. Unfortunately the ISO Rule references CEA statistics and those statistics apparently do not include data for simple cycle gas turbines that operate at the lower availability of peaking units. Since the ISO Rule is currently incomplete, the AESO should default to the best available statistics until the rule can be changed. The average of other simple cycle gas turbines in Alberta operating as peaking units is recommended as an objective standard. Furthermore, these large fluctuations will be a problem later in 2008 when it becomes apparent that the units are operating as peaking plants. There is a likelihood that there will be a need to recalculate loss factors for 2008 due to the material difference in losses that this inappropriate assumption will create.	**The Generic Stacking Order (GSO) was prepared consistent with the existing Loss Factor (LF) rules. The AESO notes the process to develop loss factors starts with an agreement on the GSO with stakeholders and then the development of the base cases. In general, if these items are calculated and developed without error, the loss factor is simply the outcome. The process was deliberately developed to ensure objectivity and minimal judgement by the AESO when completing the loss factor calculation. The discussion on the GSO output most correctly should occur during the GSO review period in July. That said, although the incapability methodology specified in the rules is clearly defined, the AESO considers the resulting modelling for new peaking units does not yield reasonable results. In addition, the AESO did not discuss the outputs of these new generating units in June when the historical values for existing generating units were sent to generators for comments. For these reasons, the AESO has recalculated the 2008 loss factors prior to January 1, 2008.**

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<table>
<tr><th>TCE Concern</th><th>AESO Response</th></tr>
<tr><td>2. In Appendix I of the “2008 Loss Factor” document, the loads within the models for 2007 and 2008 were provided by the AESO. Except for the fall models, the load on the transmission system is lower in 2008 than 2007. Given the recent load growth statistics for Alberta, TransCanada would have expected that the 2008 load forecast to have been higher than 2007.

In support of this assumption, TransCanada summed the generator output in the Generation Stacking Order (GSO) provided by the AESO on August 28, 2007. The 2008 GSO reflects the historical generation supply from June 1, 2006 to May 31, 2007. TransCanada found that the peak demands derived from the 2008 GSO were higher than the peak demands derived from the 2007 GSO. If the peak demands in the GSO from 2007 to 2008 have increased, why was the 2008 load forecast in the loss factor models lower than loads used to calculate the 2007 loss factors? TransCanada recommends that the AESO adjust the load data in the 2008 loss factor models to reflect a more realistic 2008 load forecast.</td><td>Appendix I shows the AIL (transmission and behind the fence load) whereas the loss factors are calculated based on the AIES (transmission only). The AESO agrees with TCE’s observation. The reason for lower load in 2008 is lower behind the fence load used in the cases. However, behind the fence load has no impact on loss calculation and, as a result, they are netted off. For clarity, the AESO provides an example using the WNP cases of 2007 and 2008. Please see the table below:

<table><tr><td></td><td colspan="3">Total</td></tr><tr><td>Year</td><td>AIL</td><td>AIES</td><td>GSO</td></tr><tr><td>2007</td><td>8317.2</td><td>6931.3</td><td>7343.4</td></tr><tr><td>2008</td><td>8142.9</td><td>7421.2</td><td>7675.3</td></tr></table>
The AIES load, which is transmission load, is higher in 2008 than 2007. The loss factor is based on net-to-grid or net-from-grid and this is why behind the fence load does not have any role in the calculation. The AESO also notes load may be forecasted to increase or decrease from year to year in some areas. Please refer to the December 7 2007 presentation on how the load in the northwest in 2008 is slightly lower in some areas than forecasted in 2007.</td></tr>
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3. TransCanada understands that the 500 kV KEG upgrade has been delayed due to problems with a transformer. All of the loss factor models include a new 500 kV line in the KEG area. If the KEG conversion is not completed before the end of 2007, the loss factor models should be modified to remove the upgrade to 500 kV and leave the KEG system at 240 kV until the project is expected to be completed.	**The processes involved in the loss factors calculation such as GSO, Base Cases, Project selection uses latest information available at the time of development. The 500 kV KEG loop is used as it appeared on the project list with an in-service-date of October 31, 2007 at the time of 2007 loss factor base case development. It should be noted the disposition of the facility has not yet been determined. If the KEG upgrade proceeds in 2008, an impact on loss factors will be made in accordance with the rule.**

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4. TransCanada understands that it has been a longstanding practice to raise the Sundance bus voltage to help support the 240 kV lines in northwest Alberta. This practice was apparently omitted in the 2008 loss factor models. **In OPP 501, Northwest Area Operation, the system controller is required to "Adjust Sundance 240 kV bus voltage within the desired range as specified in OPP 702, if considered necessary." In OPP 702 Table 1, the voltage at Sundance should be a minimum of 252 kV with a desired range of 255 kV to 262 kV. In the 2006 and 2007 models the "135 Sundanc4" bus was modeled at 257 to 260 kV which is within "the desired range as specified in OPP 702". In 2007, the "135 Sundanc4" bus voltage is modeled at 252 kV which is below "the desired range as specified in OPP 702". TransCanada recommends that the voltage at the Sundance bus be increased in the models to reflect the AESO operating policies described above. Conducting these adjustments will also maintain consistency with modelling in previous years.**	**The AESO applies historical voltage profiles to set voltages in each of the cases. Tolerances of ±5% are applied. This method inherently recognizes OPP voltage dispatch The AESO believes the cases are representative.**

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TCE Concern	**AESO Response**
5. The Transmission Regulation section 19(2)(e) states that "the loss factor must be one number at each location" (underlining added). TransCanada is concerned that the new Valleyview #2 and the existing Valleyview generators are in the same location and yet the loss factors are 1.75% for the existing generator and 2.41% for the new generator. Similarly, the Rainbow Lake generators are at the same location and yet the loss factors vary between a credit of 0.72 and a charge of 1.47. Yet at TransCanada's Bear Creek facility, the losses are the same for both generators. TransCanada believes that the Transmission Regulation requires generators at the same location to have the same or similar loss factors.	**When generators are connected at exactly the same bus, then the loss factors at that location is the same. When there is a separation of buses connecting generators (such as in this case), then the loss factor will be slightly different for each bus. The AESO published the 2008 raw loss factors (RLF) on November 01, 2007 and it can be found the RLF for Valleyview (LF calculated bus 1171) and Valleyview #2 (LF calculated bus 1172) are very close (within 0.3%). The calculation of normalized loss factor uses seasonal volume as weighting factors and hence it makes the final loss factors different, even they are in the same electrical vicinity.**

TCE Concern	**AESO Response**
6. In the 2008 loss factor models some of the transformers are overloaded. The overloaded transformers are in the attached table. TransCanada recommends that these overloads be corrected and the loss factors recalculated.	**The overloading of the distribution transformers and 69kv regulators does not significantly change loss factors.**