



2007 AESO GENERIC STACKING ORDER Stakeholder Questions/Comments and AESO Responses

September 14, 2006

We would like to thank those stakeholders who took time to ask questions and provide comments about the August 2, 2006 version of the 2007 AESO Generic Stacking Order. Questions and comments were received from HR Milner.

Stakeholder Question/Comment	AESO Response
Please provide the MP_ID and bus number associated with each generator in the draft GSO.	The AESO will add columns including the MP_ID and PSS/E bus for reference on the GSO. The addition of these columns allows reference to other AESO materials regarding the loss factors.
Please indicate on the 2007 GSO which generators are SPR&D generators, which are distribution connected generation and which are preliminary generation.	The SPRD units are listed from 27 to 36 on the 2007 GSO, namely WESGEN, White Court, Bridge Creek, Drayton Valley PI IPP, Belly River IPP, Chin Chute, Dickson Dam 1, Water IPP, St Mary IPP, and Raymond Reservoir. Distributed generators will be identified in the GSO. No preliminary generation is included in 2007.
Please provide a cross reference between generators in the 2007 GSO and the generators listed on the AESO's Current Supply and Demand webpage.	The AESO does not understand the request. With the name of the assets occurring in the GSO and the CSD, interested parties should be able to identify assets between lists.
Please provide the area number associated with each generator in the draft GSO.	The area number is not used explicitly in the development of loss factors. Alternatively stakeholders can refer to the maps provided for the 2010 results for more general area classifications. To more closely align your request with standard data requests of AESO, please contact Pamela McLean. She will provide access to AESO and system data through TASM0.
Please provide the aggregate load in total and by area number for each of the twelve	The load component of loss factor determination is not specifically part of the GSO. When the base cases are produced, the load will be available with in the base cases



scenarios modeled for 2007 and 2006.	and the RAWD files. Users can review the load in any format they wish.
Please indicate if the forecast load was scaled down to meet available generation in any of the twelve scenarios used by the AESO for the calculation of the 2006 and 2007 Loss Factors. If so please indicate both the scaled and un-scaled loads for each scenario.	The load component of loss factor determination is not specifically part of the GSO. When the base cases are produced, the load will be available with in the base cases and the RAWD files. Users can review the load in any format they wish.
Please provide, by area, the aggregate hourly 2007 load forecast used to determine the load levels in the twelve scenarios modeled by the AESO? Please indicate if the load levels in the twelve scenarios relate to AIES or AIL load?	The load component of loss factor determination is not specifically part of the GSO. When the base cases are produced, the load will be available with in the base cases and the RAWD files. Users can review the load in any format they wish. Further, the load is utilized by bus and stakeholders can gather the load by area if they wish when the cases are available. The load used is AIES for the purposes of loss factors.
Please provide the forecast of load growth from 2005 to 2006 and from 2006 to 2007 that the AESO used in developing the 2007 load forecast?	The load component of loss factor determination is not part of the GSO. The AESO may provide some elementary load analysis when the cases are produced. However, the focus of the overall initiative will be to use the load forecast as an input to producing loss factors.
Please provide, in the same format as the draft GSO, the generation dispatch by generator for each of the twelve 2007 load flows used by the AESO in the calculation of the 2007 LF.	The generation dispatch will be evident in the base cases when they are produced. The order of the generators dispatched will be as per the GSO. If desired, the AESO can provide the marginal unit in each case.
Please provide, in the same format as the draft GSO, the generation dispatch by generator for each of the twelve 2006 load flows used by the AESO in the calculation of the 2006 LF.	The generation dispatch is included in the base cases on the AESO web site at http://www.aeso.ca/transmission/10459.html . The order was as per the GSO.
Will the Valleyview generator no longer be dispatched to synchronous condense mode in 2007?	Based on the confidential OPP's, the SCM is not expected. If the real system requires SCM from Valleyview, it will be dispatched as required.



<p>Please indicate the Little Smoky 240 kV and 144 kV voltages and the MVAR production or absorption from the Valleyview generator in each of the twelve scenarios modeled by the AESO to determine the 2006 loss factors and the twelve scenarios modeled by the AESO to determine the 2007 loss factors.</p>	<p>The base cases for 2007 have not yet been developed. The voltage levels for 2006 for all system assets are available in the RAWD and base cases on the AESO web site, http://www.aeso.ca/transmission/10459.html.</p>
<p>Please explain why, in 10 of the 12 scenarios modeled by the AESO, the total MW capacity available in the draft 2007 GSO is less than the capacity available in the 2006 GSO. Is the generation capacity available to meet load expected to decline in 2007?</p>	<p>The MW capacity is governed by existing capacity, the expectation of new generation proposed each year, retirements, actual performance of units in the previous year, and real generation additions. Some generators proposed in 2006 did not connect. If the average generation levels do not meet load levels in 2007, the AESO has outlined its plan for these possibilities.</p>
<p>Based on the above statement, it is Milner's understanding that none of the historical generation shown in Block 2 for Rainbow 1, 2, 3, 4, 5, Fort Nelson, Poplar Hill, Valleyview and Bear Creek G1 and G2 were TMR dispatches in either the 2006 GSO or the draft 2007 GSO. Can the AESO confirm this is the case?</p>	<p>The AESO cannot comment on confidential aspects of its agreements.</p>
<p>Why is capacity from Sundance 4 upgrade shown in the fall scenarios but not in the winter scenarios for 2007?</p>	<p>The AESO will clarify the seasonal definitions used in loss factor determination in the GSO support document. The winter season is December (year Y-1), January, and February (year Y).</p>
<p>Assuming the Sundance 4 upgrade is a new generator and has no operational history what is the basis on which the AESO determined that it would be dispatched only after all other generation in the province?</p>	<p>The Sundance 4 project is not a new unit. It will be evaluated initially as per CEA statistics however to assess its output in the first year. It is regarded as preliminary generation as per our latest information.</p>
<p>Have the ALPAC, MEG Energy, Blue Trail,</p>	<p>The AESO does not comment on the status of projects on behalf of proponents. For</p>



<p>Summerview Ph 2, Chin Chute, and Castle Rock Ridge generation projects been cancelled or have these been deferred to 2008 or later?</p>	<p>the purposes of loss factors, the AESO only uses the latest data available showing an in-service date for the next year.</p>
<p>For generators listed as preliminary, can the AESO indicate if</p> <ul style="list-style-type: none"> ○ the generator has received regulatory approval, ○ whether a CCA has been signed with the AESO, ○ whether construction has commenced on the generator and, ○ the basis on which the AESO expects the generator will connect in the following year. 	<p>Generators are preliminary if they have an ISD for the next year. The unit may or may not connect. If the unit has a CCA, and construction has commenced, then the unit is added into the GSO rankings as per its' generation type. Actual connection dates may or may not correspond with the latest information used in the development of the GSO.</p>
<p>Please indicate if the dispatch order is determined from an analysis of generator output and the actual historical hourly pool price (both generator outputs and historical pool prices are publicly available and not confidential) or if the dispatch order is determined from an analysis of generator output and generator offers.</p>	<p>The order is determined from a combination of the confidential offer information and the net-to-grid amounts. As such, AESO cannot share the data.</p>
<p>Please provide a detailed numerical example illustrating how the stacking order is derived. If it is necessary to protect confidentiality please use hypothetical data for the example.</p>	<p>The process used by AESO is described on page 6, item #9 in the GSO document. Hypothetical data will not be very useful as it cannot be checked.</p>



Full Letter From Milner Power:

Comments and Questions posed to the AESO by Milner Power Inc. on the August 2, 2006 version of the 2007 Draft Generic Stacking Order

On August 2, 2006 the AESO issued a draft of the 2007 Generic Stacking Order and supporting documentation. In the email that accompanied these documents the AESO requested stakeholders to submit any comments and questions on these documents by August 16, 2006. In response, Milner Power has prepared the following comments, questions and requests.

1. In 2006 the final loss factors were provided by facility name and MP_ID. The supporting document to the 2007 Generic Stacking order titled “2007 Generic Stacking Order Loss Factors” indicates,

*An equivalent generator is considered at the bus from which the NTG amount related to the Measurement Point Identification (MPID) is obtained. For example, Horseshoe has 4 generators with a single MPID which is HSH. The 4 generators are connected to Bus 172 (12 kV). They are represented as a single unit at Bus 171 (138 kV) because the AESO billing database contains NTG data for all of these four units (related to MPID HSH) at Bus 171. The same approach is applied to the Industrial System Designations (ISD). All ISDs are represented by a single equivalent generator and load. **The GSO contains a column with bus numbers for corresponding MPIDs.***

The 2007 draft generic stacking order does not indicate the MP_ID or bus number associated with each generator.

Request: Please provide the MP_ID and bus number associated with each generator in the draft GSO.

2. The supporting document to the 2007 Generic Stacking order titled “2007 Generic Stacking Order Loss Factors” indicates,

*5) **Small Power Research & Development** – The relative order remains the same as the 2006 GSO. SPR&D generators are exempt by law from paying for losses.*



6) ***Distribution Connected Generation*** – consists of distribution connected generators with STS contracts who occasionally supplies power to the AIES. Several prime movers may exist at a distribution generation location. The placement of the distribution generation in the stacking order is determined mainly by the predominant source of generation at the STS location and ranked by historical hourly pool price.

7) ***Preliminary Generation*** – consists of the generators with preliminary status. These generators do not have a contract with the AESO but are included in the 2007 GSO as it is expected they will connect.

The 2007 draft generic stacking order does not indicate which generators are SPR&D generators, distribution connected generation or preliminary generation.

Request: Please indicate on the 2007 GSO which generators are SPR&D generators, which are distribution connected generation and which are preliminary generation.

Request: Please provide a cross reference between generators in the 2007 GSO and the generators listed on the AESO's Current Supply and Demand webpage.

3. To assess changes in power flows from the 2006 scenarios, it would be very useful if the planning area associated each generator was given in the GSO.

Request: Please provide the area number associated with each generator in the draft GSO.

4. To assess the generation dispatch in each of the twelve load flow scenarios modeled by the AESO it is necessary to know what the aggregate load is in each of the twelve scenarios. To see how power flows are changing from 2006 the aggregate loads in each planning area for each of the twelve scenarios modeled by the AESO are also required.

Request: Please provide the aggregate load in total and by area number for each of the twelve scenarios modeled for 2007 and 2006.



Request: Please indicate if the forecast load was scaled down to meet available generation in any of the twelve scenarios used by the AESO for the calculation of the 2006 and 2007 Loss Factors. If so please indicate both the scaled and un-scaled loads for each scenario.

Request: Please provide, by area, the aggregate hourly 2007 load forecast used to determine the load levels in the twelve scenarios modeled by the AESO? Please indicate if the load levels in the twelve scenarios relate to AIES or AIL load?

Request: Please provide the forecast of load growth from 2005 to 2006 and from 2006 to 2007 that the AESO used in developing the 2007 load forecast?

5. The GSO shows the MW capacity available for dispatch to meet the forecast 2007 load in each of the twelve scenarios. However, if the aggregate load in a particular scenario is less than the available generator capacity not all of this generation will be dispatched.

Request: Please provide, in the same format as the draft GSO, the generation dispatch by generator for each of the twelve 2007 load flows used by the AESO in the calculation of the 2007 LF.

Request: Please provide, in the same format as the draft GSO, the generation dispatch by generator for each of the twelve 2006 load flows used by the AESO in the calculation of the 2006 LF.

6. The 2006 GSO indicated the Valleyview generator was dispatched to synchronous condense mode in several scenarios. In the 2007 draft GSO the Valleyview generator is no longer dispatched to synchronous condense mode.

Question: Will the Valleyview generator no longer be dispatched to synchronous condense mode in 2007?

Request: Please indicate the Little Smoky 240 kV and 144 kV voltages and the MVAR production or absorption from the Valleyview generator in each of the twelve scenarios modeled by the AESO to determine the 2006 loss factors and the twelve scenarios modeled by the AESO to determine the 2007 loss factors.



7. In 10 of the 12 scenarios modeled by the AESO the total MW capacity available in the draft 2007 GSO is lower than the MW capacity available in the 2006 GSO.

Question: Please explain why, in 10 of the 12 scenarios modeled by the AESO, the total MW capacity available in the draft 2007 GSO is less than the capacity available in the 2006 GSO. Is the generation capacity available to meet load expected to decline in 2007?

8. On July 25, 2006 the AESO posted a summary of the 2006 loss factor meeting notes and actions. In these notes the AESO indicated,

The TMR generators' actual historical outputs consist of two components – the energy market and the TMR component. For the purpose of GSO preparation the AESO removes the TMR component from the total historical output and uses the energy market component only as the historical output. TMR is shown separately.

Question: Based on the above statement, it is Milner's understanding that none of the historical generation shown in Block 2 for Rainbow 1, 2, 3, 4, 5, Fort Nelson, Poplar Hill, Valleyview and Bear Creek G1 and G2 were TMR dispatches in either the 2006 GSO or the draft 2007 GSO. Can the AESO confirm this is the case?

9. The draft 2007 GSO indicates new capacity from Sundance 4 upgrade will be available in fall of 2007. Since the fall months are September, October and November, it would seem reasonable that the new capacity would also be available in December of 2007. However, the capacity given for the winter months is shown as zero. If the capacity is anticipated to be unavailable in January and February but available in December, I would expect that the MW amounts for the winter peak, medium and low load cases would not be zero.

Question: Why is capacity from Sundance 4 upgrade shown in the fall scenarios but not in the winter scenarios for 2007?

Question: Assuming the Sundance 4 upgrade is a new generator and has no operational history what is the basis on which the AESO determined that it would be dispatched only after all other generation in the province?

10. The 2006 GSO listed the following generators as preliminary.



- a. ALPAC
- b. MEG Energy
- c. Blue Trail
- d. Summerview Ph 2
- e. Chin Chute
- f. Castle Rock Ridge
- g. GW Power Soderglen

In total these generators were expected to contribute between 196.5 and 260.9 MW of capacity to the GSO. A review of the 2007 GSO appears to indicate that only one of these generators (GW Power Soderglen) is still expected to connect.

Question: Have the ALPAC, MEG Energy, Blue Trail, Summerview Ph 2, Chin Chute, and Castle Rock Ridge generation projects been cancelled or have these been deferred to 2008 or later?

Request: For generators listed as preliminary, can the AESO indicate if

- the generator has received regulatory approval,
- whether a CCA has been signed with the AESO,
- whether construction has commenced on the generator and,
- the basis on which the AESO expects the generator will connect in the following year.

11. The supporting document titled “2007 Generic Stacking Order Loss Factors” discusses how the order of dispatch in the GSO is derived. However the process is still very confusing and is far from transparent. The AESO indicated,

To determine dispatch order, a statistical analysis is used to determine a relationship between the generator output and the actual historical hourly pool price. The process is explained in ‘Key Changes’.

Later in the document titled “2007 Generic Stacking Order Loss Factors” the AESO indicates,

An energy stacking order is created for all generation units based on 12 months of historical data. The generation energy market behavior analysis is updated with the latest historical data from the period June 1 2005 to May 31 2006. Each generator’s hourly bidding prices and associated generation MW changes are put together and sorted as a multi-block stacking order for that generation unit for the 12 months period.



Question: Please indicate if the dispatch order is determined from an analysis of generator output and the actual historical hourly pool price (*both generator outputs and historical pool prices are publicly available and not confidential*) or if the dispatch order is determined from an analysis of generator output and generator offers.

Request: Please provide a detailed numerical example illustrating how the stacking order is derived. If it is necessary to protect confidentiality please use hypothetical data for the example.