



May 11, 2007

Dear Stakeholders:

**Re: ISO Tariff – Generating Unit Compliance with Reactive Power Requirements**

As you may be aware, the AESO has undertaken a program to review and verify generating unit MW and MVAR capabilities, in response to observed system voltage control issues on the Alberta Interconnected Electric System (AIES). The reactive power capability of generating units is critical to maintaining reliable and efficient operation of the AIES under all operating conditions.

The AESO determined that some generators were operating at a MW level where they were not complying with the reactive power requirements specified in the AESO Interconnection Requirements. The reactive power requirements are defined in the AESO Interconnection Requirements and apply to all load and generators that are interconnected to the AIES (not including distribution connected generators), as per Article 4.1 of the ISO Tariff. In accordance with Sections 20(3) and 31(b) of the *Electric Utilities Act* (EUA), market participants are required to comply with ISO Rules and the terms and conditions of the ISO Tariff.

In the summer of 2005, the AESO commenced discussions with affected generators and interested parties and provided its assessment of the maximum gross MW limit at which the reactive power requirements are satisfied and provided generators the opportunity to provide technical evidence to support a different value. Based on further discussion, the AESO updated its assessments of the maximum gross MW limit at which the reactive power requirements may be satisfied and confirmed its understanding in letters to affected generator owners and interested parties in the fall of 2006. The AESO also indicated that it would be commencing a testing program with all generators to verify the limits and met individually with generators to discuss and arrange for these tests.

The AESO also provided notification that the AESO would be monitoring compliance with the identified MW limits effective November 10, 2006. In cases of non-compliance, the AESO would contact the generator after the fact to discuss the circumstance. The AESO also met one-one with generators to review the limits and discuss the testing program. This date was subsequently extended to December 15, 2006 to allow affected

parties additional time to evaluate and review data and to meet the specified reactive power requirements.

Through these discussions, it became apparent that there were some potential conflicts between the reactive power requirements described in the commercial agreements for the Power Purchase Agreement (PPA) generating units and those contained in the AESO Interconnection Requirements. It was also determined that the PPAs do not specifically identify an excess energy MW level, therefore the reactive power requirements for a generating unit when it is producing excess energy are also undefined. Operation in a mode where a generator is producing excess energy and maximum MW with minimal reactive capability can be unreliable for the AES and unstable for a generator.

The AESO therefore undertook a review of the reactive power requirements and obligations described in the commercial agreements for the Power Purchase Agreement (PPA) to consider whether it was reasonable and fair to grant any discretion pursuant to the AESO Interconnection Requirements and the reactive power requirements. The AESO also undertook to define a consistent approach for defining the excess energy output MW level for PPA units and the associated reactive power requirements.

The relationship between the *Power Purchase Arrangements Designation Regulation* and the EUA and its other regulations is clarified in Section 96(1) of the EUA. That section provides that the PPAs continue to have effect in accordance with their terms and conditions, but that they are subject to the EUA and the regulations. Therefore, both the EUA and the other regulations prevail over the PPAs in the *Power Purchase Arrangements Designation Regulation*.

Notwithstanding this interpretation, the AESO recognizes the concerns and potential cost implications raised by affected parties. Accordingly, as permitted in Sections 3.4 and 4.5 of the ISO Tariff, the AESO proposes to exercise reasonable discretion in respect of compliance with the Interconnection Requirements. To that end, the attached guideline has been developed in order to define the parameters to be considered in applying discretion respecting the treatment of reactive power requirements for PPA generating units and also for generator upgrades.

We therefore confirm that PPA generators will be required to provide reactive power capability as derived from the D-curves contained in the PPA. We also consider that an excess energy capacity of up to 2%<sup>1</sup> of the PPA committed capacity should meet the reactive power requirements as determined from the PPA D-curves. If PPA generators expand and exceed 102% of the original committed capacity, then the Reactive Power requirements in accordance with the AESO interconnection standard will apply to any output of the generator that is in excess of the previous Maximum Authorized MW.

Attached to this letter is a DRAFT Application Guideline for Generator Interconnection Requirements – Reactive Power. The AESO is seeking comments that add further

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<sup>1</sup> If the PPA committed capacity was 400 MW, the excess energy capacity would be 8 MW bringing the total capacity to 408 MW.

clarity to the Guideline on or before June 8<sup>th</sup>, 2007. Comments may be sent to Jerry Mossing (jerry.mossing@aeso.ca).

If you require further clarification on this matter, please contact, Jerry Mossing at 403 539-2496.

Sincerely,

*Original signed by*

Warren Frost, P. Eng.  
Vice-President, Operations and Reliability