

Transmission Constraints Management Rule

A. Definitions

“**downstream**” means the receiving end of electrical energy on a constrained path within a **transmission constraint**.

“**effective factor**” means a ratio, calculated by **load** flow studies, of the change in the flow on the constrained path corresponding to a change in an **energy production**, an **energy consumption** or an energy flow on an **interconnection**.

“**upstream**” means the supply end of electrical energy on a constrained path within a **transmission constraint**.

B. ISO Rule

9.4 Transmission Constraints Management

9.4.1 Purpose of Rule

The purpose of this **rule** is to prescribe the means by which the **ISO** determines if a **transmission constraint** exists and if the **ISO** has made such determination, how the **ISO** must operate the **transmission system** and manage **transmission constraints**.

9.4.2 Determining a Transmission Constraint

The **ISO** may determine that a **transmission constraint** exists by one or more of the following means:

- a) By assessing an application from a **system access customer** pursuant to the **ISO tariff** for either **system access service** or for an increase to an existing **STS contract capacity** and applying Transmission Operating Criteria, Part II of the AESO Transmission Reliability Criteria to the specifications of the application;
- b) By performing operations planning analysis based on the Transmission Operating Criteria, Part III of the AESO Transmission Reliability Criteria from time to time to assess if such criteria is met; or
- c) By the **system controller** observing a thermal or voltage limit excursion or predicting a thermal or voltage limit excursion after performing a contingency analysis.

9.4.3 Notification to Market Participants

- a) In the event the **ISO** has determined pursuant to **rule** 9.4.2 a) that a **transmission constraint** exists, the **ISO** will,

- i) notify all **market participants** that a requested **STS contract capacity** increase may cause a potential congestion condition;
- ii) provide to **market participants** a description of the **transmission facilities** that will be required to relieve the **transmission constraint** and the estimated date of **energization** of such **transmission facilities** including any **RAS** requirements;
- iii) develop and approve an **ISO** Operating Policy and Procedure to describe how the **ISO** will operate to manage the **transmission constraint**;
- iv) when the **transmission facilities** required to relieve the **transmission constraint** have been **energized**, notify **market participants** that the potential congestion condition has been relieved and revise the relevant existing Operating Policy and Procedure to reflect the new system capabilities.

9.4.4 Transmission Constraint Mitigation

- a) Subject to **rule 9.4.4 b)**, the **ISO** must follow the following steps sequentially in mitigating a **transmission constraint**:
 - i) using the **effective factor** as a guideline, determine the **assets**, including **load**, supply and interchange that would be effective in managing the **transmission constraint**;
 - ii) ensure generators are not generating above their **maximum capability** by cancelling related **directives**;
 - iii) **DDS** providers that are **downstream** of the **transmission constraint** will receive a **DDS dispatched off** direction by the **system controller**;
 - iv) curtail opportunity **export services downstream** of the **transmission constraint** and curtail opportunity **import services upstream** of the **transmission constraint**;
 - v) curtail **demand opportunity service loads downstream** of the **transmission constraint**;
 - vi) **dispatch** effective **generating assets downstream** of the **transmission constraint** that are contracted with the **ISO** to provide **TMR**. In circumstances where the **transmission constraint** creates a local **load** pocket, as defined by the **ISO**, issue **directives to generating units downstream** of the **transmission constraint** to provide **TMR**.

- vii) curtail effective **generating assets**, as per rule 9.4.4 a) i), **upstream** of the **transmission constraint**. Effective **generating assets** will be curtailed using the **energy market merit order** with the highest priced effective **offer** being curtailed first, followed by the next highest priced effective **offer**, if necessary, during the remainder of the current **settlement interval** and the next two **settlement intervals**. If there is a need to curtail effective **generating assets** with equal price **offers**, curtailment will occur using a pro-rata methodology. If the **transmission constraint** persists on a continuous basis for longer than the remainder of the current **settlement interval** and the next two **settlement intervals**, the required curtailment will be reallocated to all effective **generating assets** whose offers are below **SMP** using a pro-rata methodology.
 - viii) **dispatch generating assets downstream** of the **transmission constraint**, in accordance with the **energy market merit order** to increase or begin **energy production**;
 - ix) curtail **demand transmission service** loads **downstream** of the **transmission constraint**, if so required by the AESO Transmission Reliability Criteria. The curtailment will be allocated using the **energy market merit order** with the lowest priced effective **bid** being curtailed first, followed by the next lowest priced effective **bid**, if necessary. If there is a need to curtail **loads** with equal price **bids** or there are no **bids** remaining, curtailment will occur on a pro-rata basis as required or practical;
 - x) in all of the above steps that involve **generating asset** or **load** curtailments, where the **generating asset** or **load** is supplying both **ancillary services** and **energy production**, then **ancillary services** will be curtailed first, before **energy production**.
- b) The **ISO** may take the following measures in managing **transmission constraints**:
- i) in the event the **system controller**, acting reasonably, expects a **transmission constraint** to last a short duration, curtail one or more **generating units** to above or at the **minimum stable generation** level of the **generating unit** if the alternative would be to curtail the **generating units**;
 - ii) in circumstances where abnormal operating or market conditions exist, the **system controller** acting reasonably may, in taking mitigation measures to address a **transmission constraint**, take

steps not listed in **rule 9.4.4 a)** providing that those steps are substantially consistent with **good electric operating practice**;

- iii) the **system controller** must, in taking mitigation measures to address a **transmission constraint** in circumstances where such measures may result in the **ISO** being in contravention of a **reliability** standard requirement, take immediate action to achieve compliance within the operating limits within the required time; provided that subsequent to the **system controller** ensuring that the **AIES** is operating in a safe and reliable mode, the **ISO** must follow the steps as per **rule 9.4.4 a)**.