Proceeding ID 41 – AUC Decision 2009-042
Proposed New ISO Rules

Draft of Section 9.4

Transmission Constraints Management

External Consultation Draft

Version 2.0

July 20, 2010

A. G1 Definitions

The following new definitions are incorporated in to Section G1 of the ISO rules:

"downstream flow side" means, in relation to a **transmission constraint**, an area of the **interconnected electric system** more proximate to the load or consumption location than to the source of electrical energy.

"constraint effective factor" means a ratio, calculated by **load** flow studies conducted by the **ISO,** of the change in the flow of electric energy through a **transmission constraint** to a change in **energy production**, **energy consumption** or an electric energy flow across an **interconnection**.

"upstream flow side" means, in relation to a **transmission constraint**, an area of the **interconnected electric system** more proximate to the source of electrical energy than to the load or consumption location.

B. Draft of New ISO Rules Text

1. Applicability

Section 9.4 applies to:

(1) the **ISO**; and

(2) a **pool participant** registered under Section 1 of the **ISO rules.**

2. Requirements

9.4 Real Time Transmission Constraints Management

9.4.1 Real Time Transmission Constraint Mitigation

(a) Subject to subsection 9.4.2, the **ISO** must comply with the following procedures in the following sequence to mitigate a **transmission constraint** in real time:

(i) taking in to account any applicable **constraint effective factors,** determine the **assets** that would be effective in mitigating the **transmission constraint** and apply the appropriate procedure set out in this subsection 9.4.1 a) to those effective **assets**;

(ii) ensure that any effective **generating units** are not generating **MW** above their **maximum capability,** by cancelling any related **directives;**

(iii) by **directives**, curtail all effective **downstream flow side** service under **ISO tariff** rate schedules *Rate XOS 1 Hour* and *Rate XOS 1 Month*, and all effective **upstream flow side** service under **ISO tariff** rate schedule *Rate IOS;*

(iv) by **directives**, curtail effective **loads** receiving **downstream flow side** service under **ISO tariff** rate schedules *Rate DOS 7 Minutes, Rate DOS 1 Hour* and *Rate DOS Term*;

(v) where the use of **transmission must run** is effective, use the following additional procedures;

(A) issue a **dispatch to** any **generating unit** that is under contract with the **ISO** to provide foreseeable **transmission must run** and that is effective in mitigating the **transmission constraint** at the **downstream flow side**;

(B) in circumstances where the **transmission constraint** creates a need for unforeseeable **transmission must run** to be in compliance with **reliability standards** and **reliability** criteria, issue a **directive** to provide **transmission must run** to any **generating units** effective in mitigating the **transmission constraint** at the **downstream flow side;**

(vi) issue **directives** to curtail any **generating units** effective in mitigating the **transmission constraint** at the **upstream flow side** using the following additional procedures;

(A) The **ISO** must curtail using the **energy market merit order** with the highest priced **offer** from a **generating unit** effective in mitigating the **transmission constraint** 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 (2) **settlement intervals**;

(B) If there is a need to curtail more than one (1) such **generating unit** having equal price **offers**, then the **ISO** will issue **directives** to the **generating units** to curtail using a pro-rata methodology;

(C) If the **transmission constraint** persists on a continuous basis for longer than the remainder of the current **settlement interval** and the next two (2) **settlement intervals**, then the **ISO** must reallocate the required curtailment, using a pro-rata methodology, to all **generating units** effective in mitigating the **transmission constraint** and whose **offers** are below **system marginal price**;

(vii) by **directives,** curtail any **loads** receiving service under **ISO tariff** rate schedule *Rate DTS* at the **downstream flow side** of the **transmission constraint**, if so required by the *AESO Transmission Reliability Criteria,* using the following procedure:

(A) The **ISO** will allocate the curtailment 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;

(B) If there is a need to curtail **loads** with equal price **bids,** or there are no **bids** remaining, the **ISO** will curtail on a pro-rata basis.

(b) With regard to any of the procedural steps set out in subsection 9.4.1 (a):

(A) the **ISO** must issue **dispatches** for **dispatch down service** as appropriate in accordance with subsection 6.3.6.3 of the **ISO rules**;

(B) the **ISO** must use established procedures as appropriate to restore energy and supply balance to the **interconnected electric system** including the issuance of **dispatches** to increase or begin **energy production** to any such **generating units** that are at the **downstream flow side** of the **transmission constraint,** in accordance with the **energy market merit order**;

(c) With regard to any of the procedural steps set out in subsection 9.4.1 (a) that involve **generating unit** or **load** curtailment, if the **generating unit** or **load** is supplying both **ancillary services** and **energy production**, then **ancillary services** will be curtailed first, before **energy production**.

(d) When a **transmission constraint** has activated or is expected by the **ISO** to activate a **remedial action scheme,** and after the **ISO** has ensured that the **interconnected electric system** is operating in a safe and reliable mode, the **ISO** must recommence the procedural sequence set out in subsection 9.4.1 (a) to manage the **transmission constraint**.

9.4.2 Additional Real Time Constraint Management Procedures

As the circumstances may warrant, the **ISO** may implement the following procedures to mitigate any real time **transmission constraint**:

(a) if the result of following the procedures set out in subsection 9.4.1 a) will be to curtail any effective **generating unit** below **minimum stable generation** levels and the **ISO** expects the **transmission constraint** to last a short duration, then the **ISO** by **directive** may curtail any effective **generating units** to above or at the **minimum stable generation** level of those **generating units;**

(b) in circumstances where abnormal operating or market conditions exist, the **ISO** acting reasonably may, in implementing mitigation measures to address a **transmission constraint**, take procedural steps not listed in subsection 9.4.1 (a) if those steps are substantially consistent with **good electric industry operating practice**;

(c) the abnormal conditions referred to in subsection (b) include circumstances of unusual natural risks to the system, and issues raised by a unique real time system configuration or **reliability** concerns stemming from voltage or **reactive power** effects;

(d) in mitigating a **transmission constraint**, the **ISO** must follow the procedural sequence set out in subsection 9.4.1 (a) and any more specific and complementary **ISO rules** applicable for a given regional area of the **interconnected electric system**, unless real time operating conditions change such that following the specified sequence would put the **ISO** in contravention of a **reliability standard** requirement by failing to achieve compliance within the operating limits or required response time specified in that **reliability standard**;

(e) if the **ISO** alters the procedural sequence or takes alternate mitigating actions because of the circumstances referred to in subsections (b) and (d) above, then once the **ISO** is assured that the **interconnected electric system** is operating in a safe and reliable mode, the **ISO** must recommence the procedural sequence set out in subsection 9.4.1 (a).