

UNITED STATES OF AMERICA  
DEPARTMENT OF ENERGY  
OFFICE OF FOSSIL ENERGY

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Electricity Delivery and  
Energy Reliability

International Transmission Company  
d/b/a ITC *Transmission*

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Docket No. PP-230-4

**JOINT COMMENTS OF THE MIDWEST INDEPENDENT  
TRANSMISSION SYSTEM OPERATOR, INC. AND THE INDEPENDENT  
ELECTRICITY SYSTEM OPERATOR ANSWERING PETITION TO INTERVENE AND  
REQUEST FOR A COMMENT PERIOD OF NEW YORK INDEPENDENT SYSTEM  
OPERATOR, INC.**

The Midwest Independent Transmission System Operator, Inc. ("MISO") and the Independent Electricity System Operator ("IESO") submit these joint comments in response to the petition to intervene and request for comment period by the New York Independent System Operator, Inc. ("NYISO") regarding International Transmission Company d/b/a ITC *Transmission's* ("ITC") request to amend Presidential Permit PP-230-3.

**A. Background**

On January 5, 2009, ITC applied to the Department of Energy ("DOE") in this proceeding to amend its Presidential Permit PP-230-3 to authorize the installation and operation of two 700-MVA phase shifting transformers ("PARs") connected in series at its Bunce Creek Station in Marysville, Michigan. On March 12, 2009, both MISO and the IESO filed comments in support of ITC's application, conditioned in part on the completion of all necessary operational documents governing the operation of the PARs. On March 31, 2009 ITC filed a response to the comments stating that operational documents would be filed in this case for review by the DOE. ITC subsequently filed its supplemental reply comments on August 9, 2011, to support DOE's decision in the proceeding. In addition to the governing Interconnection

Facilities Agreement between the equipment owners, the filing included an informational copy of the CO2 Operating Instruction (“CO2”), the operating procedure between MISO and IESO which describes the operating principles and reliability requirements regarding the coordinated operation of all of the PARs that form part of the Michigan-Ontario interconnection.

On August 19, 2011 NYISO filed a petition to intervene and request for comment period (“Petition”). In support of the petition, NYISO raised a number of issues; many (if not most) of which were directly related to the interpretation of language contained in the CO2. We believe that the issues that NYISO raised in regard to the CO2 are based on an apparent misunderstanding of the intended interpretation of the language and provisions in the CO2.

It is important to note that the CO2 sets out the various existing operating principles, statutory, regulatory and North American Electric Reliability Corporation (“NERC”) reliability requirements that apply to the coordinated operation of the PARs and does not define new rules or regulations. At no point does the CO2 put interconnected reliability at risk. It appears to MISO and IESO that the reliability related concerns that NYISO raised in its Petition stem from two basic concerns; 1) how the PARs are intended to be operated and 2) how the TLR process is incorporated into the CO2. Responses to the NYISO’s concerns are set out in detail below. MISO and IESO have engaged in discussions with NYISO to address these matters. As a result of these discussions, NYISO agrees that its reliability concerns related to the modeling of the PARs in the NERC Interchange Distribution Calculator (“IDC”) have been addressed by the additional explanation of how the PARs at the Ontario/Michigan interface will be operated, and the explanation of the intended meaning of the term “Max Tap” in these joint comments.

## **B. PAR Operational Methodology**

In its Petition, NYISO states that the provisions of the CO2 would not properly implement NERC rules as they currently exist, and that the provisions of CO2 may threaten the reliability of the electric system.<sup>1</sup> MISO and IESO do not believe this to be true and have spent an extraordinary amount of time and effort over a number of years ensuring that this is not this case.

As NYISO has correctly noted, this effort included discussions within industry forums such as NERC's Interchange Distribution Calculator Working Group ("IDCWG") as well as through direct discussions between NYISO and MISO. These discussions in fact led to enhancements in the manner that MISO and IESO intend to control loop flows using the PARs.

In its filing, NYISO states that provisions in the current CO2 are very similar to changes that MISO had proposed to the NERC IDCWG in October 2010.<sup>2</sup> While this discussion included how the PARs were intended to be operated (at that point in time), it was not the primary purpose of the discussion. For example, it is important to distinguish between the requirements for the setting of inputs into the IDC versus the operation of the IDC itself. The presentation that MISO made to the IDCWG was regarding the latter subject, specifically how the IDC treats electrical transactions. More importantly however, the discussion was predicated on a proposed control methodology that was not pursued, in part due to concerns raised by NYISO.

Since and during the IDCWG discussion in October 2010, NYISO did raise concerns about the proposed control methodology that MISO and the IESO were planning on implementing and its impact on the NERC Transmission Line Loading Relief ("TLR") process. Initially MISO and IESO proposed a "one change per hour with reliability exceptions" approach to controlling loop flows using the PARs. This proposal was made in order to address asset owner concerns regarding wear

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<sup>1</sup> See Petition at 5.

<sup>2</sup> *Id.* at 8.

and tear on the assets in question. Further, this approach envisioned the PARs being adjusted once an hour unless certain reliability related exceptions required additional intra-hour changes. While well intended, this approach could have allowed some additional loop flow to occur between PAR tap changes while still considering loop flows to be controlled, or “regulated” (discussed below). The approach would also have introduced certain challenges in relation to the NERC TLR process. At the time, NYISO argued that an “agreed upon bandwidth” would be a more appropriate and reliable approach. This approach envisioned that loop flow would always be controlled within an appropriate bandwidth, as long as the PARs had the capability to do so.

Pursuant to conversations with NYISO, MISO and IESO performed additional studies and concluded that a “bandwidth” approach was indeed appropriate and was further endorsed by the asset owners. The current CO2 reflects that change by implementing a 200MW bandwidth approach for controlling the interface. The 200MW bandwidth itself was based on prior agreement with NYISO on certain of the reliability exceptions in the previous “one change an hour” approach. Specifically, the CO2 now provides that the PARs are to be operated such that the difference between the Interface Flow and the Interface Schedule<sup>3</sup> is maintained within  $\pm 200 \text{ MW}^4$  to the maximum extent practical, while staying within all applicable operational limitations<sup>5</sup>. More simply, this change requires MISO and IESO to implement all practical actions necessary to keep loop flow within the  $\pm 200 \text{ MW}$  bandwidth, as long as operational limitations of the PARs (or surrounding

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<sup>3</sup> See section 2.0 of the CO2 Operating Instruction, which defines the “Interface Deviation” to be “The difference between the Interface Flow and the Interface Schedule.”

<sup>4</sup> See section 2.0 of the CO2 Operating Instruction, which defines the “Control Band” to be “The maximum targeted Interface Deviation of  $\pm 200 \text{ MW}$ , maintained within practical considerations.”

<sup>5</sup> The 200 MW bandwidth may be intentionally exceeded if such action would be necessary and effective in preventing or resolving emergency operating situations within MISO, IESO, NYISO or the PJM interconnection (“PJM”), providing that normal PAR operations are resumed as soon as practical.

transmission system) allow. The CO2 now reduces the prospect of periods where loop flow is not actively being controlled and resolves the challenges related to the NERC TLR process.

### **C. Consistency with NERC TLR Process**

NYISO also appears to misunderstand the manner in which MISO and IESO intend for the CO2 to implement the TLR process, as currently approved by NERC.<sup>6</sup>

NERC's TLR process has been used for many years in order to control excess unscheduled electrical flows. The IDC is the primary tool used to implement this process, and in effect defines the way in which the TLR process is implemented. As the NERC TLR process evolves, the operation of the IDC is modified by "change orders" which specify the details of the agreed upon changes to the IDC. These changes are discussed and approved by rigorous NERC committee processes.

In the early 2000's, the industry initiated an effort to enhance the way PARs are "modeled" in the IDC, specifically the PARs on the Michigan-Ontario interconnection. The changes to the IDC were detailed in IDC Change Order ("CO") 38i entitled "Phase Shifter Modeling Enhancements", which was approved for implementation in February 2003 by the NERC Operating Reliability Subcommittee with testing and implementation completed on January 1, 2005. CO38i required the IDC to model PAR regulation, depending on the regulation status<sup>7</sup> of the PAR(s). The Michigan-Ontario PARs mirror approved NERC protocols.

The CO2 seeks to implement the existing IDC requirements. MISO and IESO are not proposing to define a new IDC modeling construct. The two primary regulation statuses are fairly straightforward (regulate or non-regulate). What becomes more difficult and complicated is the

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<sup>6</sup> *Id.* at 10.

<sup>7</sup> This is the PAR(s) ability to fully control the electrical flows associated with the transactions scheduled across the PAR(s).

determination of the transition between regulation statuses, or exactly when the PARs are no longer able to fully control flows across the interface.

The CO2 uses the terminology that has historically been used in the industry to describe this situation, or “Max Tap”. Conceptually, it is relatively easy to understand that this would apply when a PAR, or all PARs in a set, has reached the physical limitation of the PAR(s). In actuality, however the situation is more complex, particularly when addressing a coordinated set of PARs - as in this case<sup>8</sup>. In situations where a set of PARs are being coordinated not only to control overall flow, but to distribute flows across the various local transmission elements interconnecting the PARs, a local transmission system limitation may become the factor limiting the ability of the PARs to continue regulating flows. In other words, there may situations where tap range on any given PAR (or PARs) are “available” (have not been used up), but cannot be utilized because doing so would result in an overload on the local or underlying transmission system. Given the various configuration changes (transmission outages, PAR outages, transmission reconfigurations, etc.) that will occur, it is simply not possible to exactly define all of the operational situations which may end up limiting the PARs ability to control flow over the Ontario/Michigan interface. The CO2 recognizes this reality by generally defining the “Max Tap” state as those operating situations where the “Interface”, defined as all 4 transmission circuits (and all 5 PARS), can no longer be controlled<sup>9</sup>. NYISO appears to have misinterpreted the intended meaning of the term “Max Tap” and concluded that a Max Tap condition need only be recognized by MISO and IESO when each and every one of the PARs at the interface have reached their maximum regulating capability (either physical limitation of the PARs

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<sup>8</sup> The Michigan-Ontario interface is comprised of four transmission circuits (J5D, L4D, L51D, and B3N) and other related facilities. When in service, five PARs will collectively be operated to regulate electrical flows across the interface. The two PARs on the B3N circuit will operate in series. The CO2 provides for the coordinated operation of these facilities.

<sup>9</sup> See section 2.0 of the CO2 Operating Instruction, which defines “Max Tap” as when “The Interface (PARs collectively) has reached the maximum ability to control flow, in either direction.”

or local transmission limitations). In fact, a Max Tap condition will occur any time MISO and IESO are unable to control power flows to closely (within the Control Band) match schedules at the Ontario/Michigan interface.

Taken together, the provisions of the CO2 require that MISO and IESO take actions to regulate loop flow for as long as possible. When that ability is exhausted, and loop flow exceeds (or is expected to exceed)  $\pm 200\text{MW}$ , the IDC status flag will be set to “Non-Regulate”.

#### **D. Other Clarifications**

In its Petition, NYISO incorrectly states that the CO2 provides the responsibility and capability to determine and implement correct IDC control mode setting solely to IESO. This conclusion is inconsistent with the coordinated approach clearly required for operating these international facilities. As indicated above, this determination is not simple and requires the participation of both MISO and IESO. The intent of the CO2 is that all decisions regarding the operation of the facilities will be discussed and coordinated between MISO, IESO, ITC and Hydro One. Joint communications are required<sup>10</sup> and the CO2 specifically points out many of the operational parameters to be coordinated. As far as the IDC status flag is concerned, the CO2 merely assigns the responsibility for implementing this joint decision to the IESO. It does not assign independent discretion to IESO to make this determination. Regardless of which entity sets the IDC status flag, the CO2 requires that the flag be set such that the ability of the PARs to control loop flows is accurately reflected in the IDC and that that any change occur in a timely and fully transparent manner in order to allow other Reliability Coordinators (*i.e.*, NYISO and PJM) to incorporate the change into their operational processes. Additionally, MISO and IESO have

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<sup>10</sup> See section 3.7 of the CO2 Operating Instruction, which states “Communications will be via a telephone conference (“blast call”), as outlined in Appendix A, Table A.1”. The referenced table requires a single call between MISO, IESO, ITC and Hydro One (“HONI”).

committed to provide NYISO and PJM with the information (flows, schedules, deviation, PAR taps, etc) necessary to independently evaluate the appropriate IDC status flag setting.

#### **E. Conclusion**

As discussed herein, MISO and IESO respectfully submit that the concerns NYISO has set out in its Petition involving the adverse impact of the CO2 on reliability and reliability processes are the result of a number of unfortunate misunderstandings regarding the terms and provisions of the CO2; particularly with regard to recent changes that were made to the CO2.

Rather, the terms and conditions of the CO2 demonstrate that:

- The CO2 is fully consistent with applicable NERC rules and regulations, as well as any other applicable safety, regulatory and statutory requirements. Specifically, the CO2 correctly and reliably implements the NERC TLR process and will permit the NYISO to avail itself of the TLR process when necessary to protect reliability in New York;
- MISO and IESO did not ignore NYISO's concerns regarding provisions of the CO2. Instead, MISO and IESO implemented fundamental changes to the CO2 in response to those concerns;
- The IESO cannot unilaterally determine the PAR(s) regulating/non-regulating status that will be used in the NERC IDC. Rather, IESO has simply been assigned the responsibility of implementing a decision made jointly by MISO and IESO; and
- Operation of the PARs per the provisions of the CO2 will not negatively impact reliability (in New York or elsewhere), but will substantially enhance reliability in all electrical areas by helping to control Lake Erie loop flow.

As stated above, MISO and IESO have engaged in discussions with NYISO to address these matters. As a result of these discussions, NYISO agrees that its reliability concerns related to the



modeling of the PARs in the NERC IDC have been addressed by the additional explanation of how the PARs at the Ontario/Michigan interface will be operated, and the explanation of the intended meaning of the term “Max Tap” in these joint comments.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have caused a copy of the foregoing document to be served on each person on the attached list on October 12, 2011.

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