



## NORTH AMERICAN ENERGY STANDARDS BOARD

801 Travis, Suite 1675 • Houston, Texas 77002 • Phone: (713) 356-0060 • Fax: (713) 356-0067  
email: naesb@naesb.org • Web Site Address: www.naesb.org

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July 11, 2014  
Filed Electronically

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street N.E., Room 1A  
Washington, D.C. 20426

RE: Parallel Flow Visualization Project Status (Docket No. EL14)

Dear Ms. Bose:

The North American Energy Standards Board ("NAESB") voluntarily submits this report to inform the Federal Energy Regulatory Commission ("FERC" or "Commission") of efforts underway to improve the congestion management process of the Eastern Interconnection by increasing the reliability coordinator's real-time visibility of the source and magnitude of parallel flows in the bulk electric system, otherwise known as Parallel Flow Visualization ("PFV"). The report outlines the history of the PFV project and provides information on the progress of the NAESB Wholesale Electric Quadrant ("WEQ") Business Practice Standards to support PFV, the coordination efforts underway between NAESB, the North American Electric Reliability Corporation ("NERC"), and the Interchange Distribution Calculator Association ("IDC Association), and an expected timeline for completion. This report is intended for informational purposes only as the NAESB WEQ Business Practice Standards to support PFV are still under development and have not been tested or ratified by the NAESB membership at this time.

In addition to this informational report, NAESB intends to file periodic status reports with the Commission throughout the project to inform the Commission of the progress of the standards development and the testing of those standards. Upon completion of the test and ratification of the standards, NAESB will file a report with the Commission containing the final version of the NAESB WEQ Business Practice Standards for the PFV effort.

Respectfully submitted,

*Rae McQuade*

Ms. Rae McQuade  
President & COO, North American Energy Standards Board

cc without enclosures: Chairman, Cheryl LaFleur, Federal Energy Regulatory Commission  
Commissioner, Tony Clark, Federal Energy Regulatory Commission  
Commissioner Philip D. Moeller, Federal Energy Regulatory Commission  
Commissioner John Norris, Federal Energy Regulatory Commission  
  
Mr. Michael Bardee, Office of Electric Reliability, Federal Energy Regulatory Commission  
Mr. David Morenoff, General Counsel of the Commission, Federal Energy Regulatory Commission  
  
Mr. Michael Goldenberg, Senior Attorney, Office of General Counsel, Federal Energy Regulatory Commission  
Ms. Jamie L. Simler, Director, Office of Energy Policy and Innovation, Federal Energy Regulatory Commission

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Mr. Michael Desselle, Chairman and CEO, North American Energy Standards Board  
Mr. William P. Boswell, General Counsel, North American Energy Standards Board

Mr. Gerry W. Cauley, President and Chief Executive Officer, North American Electric  
Reliability Corporation

Mr. Mark Lauby, Senior Vice President and Chief Reliability Officer, North American  
Electric Reliability Corporation

Mr. Charles A. Berardesco, Senior Vice President, General Counsel, and Corporate  
Secretary, North American Electric Reliability Corporation

Mr. Don Shipley, Chair of the IDC Association Steering Committee, IDC Association

**UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION**

**REPORT OF THE NORTH AMERICAN ENERGY STANDARDS BOARD**

The North American Energy Standards Board ("NAESB") is voluntarily submitting this report to inform the Commission of the efforts to date to potentially enhance the congestion management process within the Eastern Interconnection through Parallel Flow Visualization ("PFV"), an effort to improve real-time visibility of the source and magnitude of parallel flows in the bulk electric system. This report outlines the history of PFV, provides information on the contributions NAESB, the North American Electric Reliability Corporation ("NERC"), and the Interchange Distribution Calculator Association ("IDC Association") have made in support of PFV, including the development of NAESB Wholesale Electric Quadrant ("WEQ") Business Practice Standards, and details the joint coordination activities and responsibilities that each organization has committed to undertake as part of the project.

PFV seeks to provide potential improvements to the Transmission Loading Relief ("TLR") process by enhancing the timing and granularity of input data to support the wide-area view of the reliability coordinators in the Eastern Interconnection, augmenting visualization of the current operating state of the bulk electric system. This improved understanding of the bulk electric system will better equip the reliability coordinators to assign more representative relief obligations during periods of congestion. To achieve this goal, NAESB is developing modifications to the NAESB WEQ-008 Transmission Loading Relief – Eastern Interconnection Business Practice Standards that will further support and complement the NERC Reliability Standards. The proposed revisions to the business practice standards will provide additional clarity as to how transactions are curtailed and further the goal of ensuring that non-firm intra-balancing authority transmission service is curtailed before firm service in conformance with the Commission's directive on curtailments.<sup>1</sup> Once NAESB has completed the initial proposed revisions to the NAESB WEQ Business Practice Standards, the IDC Association, the organization that supports and manages the Interchange Distribution Calculator ("IDC"), will perform a field test on those standards to ensure the proposed requirements meet the goals of the project.

The purpose of this status report is to inform the Commission of the actions NAESB, NERC, and the IDC Association have committed to undertake to ensure the success of the PFV project. The report is informational only and action by the Commission is not expected at this time. NAESB will continue to submit periodic status reports to the Commission throughout the duration of the project. Once the field test is completed and the standards are revised as necessitated by the results of the field test to address any reliability concerns expressed by NERC or other adverse commercial impacts, NAESB will submit a report to the Commission containing the ratified business practice standards that support PFV.

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<sup>1</sup> See e.g. Order Terminating Proceedings, *Transmission Loading Relief Reliability Standard and Curtailment Priorities*, 139 FERC ¶ 61,218, at P 9 (2012) [hereinafter Order Terminating NOI].

### **History of the Parallel Flow Visualization Effort**

The PFV effort began within NERC after the Congestion Management Process Working Group approached the NERC Operating Committee regarding potential improvements to the TLR process. The Congestion Management Process Working Group reports to the Congestion Management Process Council and is comprised of entities that have executed operating agreements containing congestion management processes. A NERC Standards Authorization Request was developed, and the NERC IDC Working Group (“IDCWG”), overseen by the NERC Operating Reliability Subcommittee (“ORS”), was tasked with developing a proposal for addressing the industry issues regarding the TLR process. Both the modifications to the TLR process championed by the Congestion Management Process Working Group and the proposal eventually made by the NERC IDCWG involved a hybrid approach, combining reliability and commercial components. For this reason, MISO and PJM, both members of the Congestion Management Process Working Group, approached NAESB to request NAESB consider taking action to mirror and complement the modifications to the TLR process being considered within NERC. In response to this request, NAESB created an item for the 2008 WEQ Annual Plan to direct the NAESB WEQ Business Practices Subcommittee (“BPS”) to prepare a recommendation for the future path of TLR in concert with the NERC PFV efforts.

The NAESB WEQ BPS began work to develop coordinating business practice standards in June 2009 after the NERC ORS passed a motion indicating support for the PFV proposal being developed by the NERC IDCWG. In November 2009, the NERC ORS approved the completed NERC PFV Proposal, which included the change order for modifications to the IDC tool and a proposed project timeline. The proposed project timeline included a twelve to eighteen month field test for the modifications to the IDC tool, scheduled to begin in November 2010, and directed the NERC IDCWG, prior to the initiation of the field test, to develop the test plan and work with Open Access Technology International, Inc. (“OATI”), the software vendor for the IDC tool, to implement and test the software modifications.

While efforts were underway at NAESB to develop standards complementary to the NERC PFV Proposal, the Commission issued a Notice of Inquiry<sup>2</sup> (NOI) on January 21, 2010 regarding the NERC TLR Procedure and curtailment priorities in the *pro forma* open access transmission tariff (“OATT”). In response, NAESB filed comments with the Commission committing to support the NERC PFV Proposal through the development of business practice standards and to assist NERC in ascertaining the needed modifications to the IDC tool to support the identification of generator priorities before the commencement of the field test, scheduled to begin in November 2010. However, the business practice standards being developed by the NAESB WEQ BPS relied on certain functionalities that would not be available in the IDC tool at the time of the scheduled field test. As a result, NERC sent a letter to NAESB in July 2010 requesting the NAESB WEQ BPS pursue an interim option that could be utilized during the initial field test for PFV. That same month, the NAESB WEQ BPS voted to approve a recommendation on the NAESB PFV Interim Solution, and the NAESB WEQ Executive Committee (“EC”) voted to adopt the recommendation via notational ballot on November 3, 2010. NAESB WEQ membership ratified the

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<sup>2</sup> Notice of Inquiry, *Transmission Loading Relief Reliability Standard and Curtailment Priorities*, 130 FERC ¶ 61,033 (2010).

recommendation on December 6, 2010. Of note, the NAESB WEQ Business Practice Standards that were added as part of the NAESB PFV Interim Solution were later deleted via the NAESB minor correction process before NAESB WEQ Version 003 was filed with the Commission. The deletion of the standards was done in response to an order, issued by the Commission on June 14, 2012,<sup>3</sup> terminating the January 21, 2010 NOI due to the Commission's determination that the NERC TLR Procedure did not conflict with the curtailment priorities in the *pro forma* OATT. As the standards developed for the NAESB PFV Interim Solution were included in the NAESB WEQ Business Practice Standards to address the concerns expressed by the Commission in the NOI, NAESB interpreted the order as guidance that those standards could be removed from the NAESB WEQ Business Practice Standards.

The scheduled NERC PFV field test, which in part utilized the NAESB PFV Interim Solution, was delayed by NERC in early 2011. At the time of the suspension, the NERC ORS confirmed an intention to resume the testing after the NAESB WEQ BPS finished development of the standards that would comprise the NAESB PFV Permanent Solution. However, on April 1, 2013, the IDC Association voluntarily assumed management responsibilities of the IDC tool from NERC, including oversight of the PFV field test, and the IDCWG began reporting to the IDC Association.

The NAESB WEQ BPS continues its effort to develop a recommendation on the new and modified standards that will comprise the NAESB PFV solution. An initial informal industry comment period on the draft standards was held from February 18, 2013 to March 18, 2013, during which fifteen entities submitted comments. The NAESB WEQ BPS met twelve times between March 2013 and January 2014 to address the comments. Due to the magnitude of changes resulting from the first set of informal comments, the NAESB WEQ BPS held a second informal industry comment period from January 8, 2014 to January 31, 2014. During this second informal comment period, eleven entities submitted comments. The NAESB WEQ BPS is currently working to address these comments as well as other outstanding issues and expects to vote on a recommendation on the NAESB PFV Permanent Solution during the 3<sup>rd</sup> Quarter 2014. A recommendation from the subcommittee is expected as early as the August 6 – 7, 2014 scheduled meeting of the subcommittee.

#### **The NAESB Parallel Flow Visualization Business Practice Standards**

The NAESB WEQ BPS has been engaged in the standards development process for PFV since June 2009. Currently, the recommendation proposes additional standards and modifications to NAESB WEQ-000 – Abbreviations, Acronyms, and Definition of Terms and NAESB WEQ-008 – Transmission Loading Relief – Eastern Interconnection. Throughout the effort, the subcommittee has considered industry opinion through the consensus based process of standards development and the utilization of informal comment periods. Additionally, in the drafting of the standards, the subcommittee has been conscious of and responsive to directives from the Commission touching upon the TLR process.

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<sup>3</sup> Order Terminating NOI, *supra* note 1.

In the order terminating the proceedings for the NOI, the Commission reiterated that the pro forma OATT requires non-firm transmission service be curtailed prior to the curtailment of firm transmission services.<sup>4</sup> The NAESB WEQ BPS has taken this guidance into consideration throughout the development of the standards. The proposed standards being developed by the NAESB WEQ BPS will further the goal of ensuring that non-firm intra-balancing authority transmission service is curtailed before firm service by addressing the use of static data in the calculation used by the IDC to determine relief obligations in the congestion management process and the default assumption that all generators in the Eastern Interconnection have firm transmission service. To accomplish this goal, the NAESB WEQ BPS is currently considering two improved methods for the reporting of data to the IDC: the Tag Secondary Network Service Method and the Generator Prioritization Method. These two methods support the near real-time reporting of data to the IDC and will provide more accurate information for the determination of relief obligations.

As currently drafted, the proposed standards allow balancing authorities to choose which method to implement. The Tag Secondary Network Service Method will utilize expanded electronic tagging requirements to include intra-balancing authority transactions, including transactions classified as pseudo-ties. The electronic tags for both the intra-balancing authority transactions and inter-balancing authority transactions will be used to establish the curtailment priority of the generator output which is then used in determining the relief obligation. The Generator Prioritization Method uses a generator priority schedule, which details the firm and non-firm transmission priorities of each generator, to determine the assignment of curtailment priorities. The determination of transmission priorities must be consistent with the transmission service provider's tariff.

Through the course of the development of the proposed standards, the NAESB WEQ BPS has also made accommodations for requests received from the industry through the informal comment periods. One such request was that the proposed standards recognize the use of seams agreements between entities and their role in the congestion management process. Under the proposed standards, an entity that has a seams agreement incorporated into its' tariff or governing documents will be able to submit overrides of its transmission priorities to the IDC for the flowgate(s) identified as part of the agreement. As currently proposed by the draft standards, the priority established in the seams agreement will replace the transmission priority determined by the IDC calculation. Any communication from the Commission or Commission staff regarding the proposed standards' implementation of the Commission's guidance regarding curtailment priorities would be informative as actions are being taken to finalize a recommendation on the standards during the 3<sup>rd</sup> Quarter 2014. The NAESB WEQ EC has indicated that the committee intends to utilize the NAESB full staffing process<sup>5</sup> for the recommendation. Under the full staffing process, after the NAESB WEQ EC takes action to approve the recommendation, the standards will be held in abeyance to allow the IDC Association to conduct and complete the PFV field test with the support of NERC and NAESB. This will allow the NAESB WEQ BPS to make modifications to the standards as necessary to address any

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<sup>4</sup> Order Terminating NOI, *supra* note 1, at P 9.

<sup>5</sup> See lines 432 – 456 of the NAESB Operating Practices for a description of the NAESB full-staffing process:  
[http://www.naesb.org/pdf/operating\\_procedures.pdf](http://www.naesb.org/pdf/operating_procedures.pdf)

equity or reliability concerns that arise during the field test before the standards are ratified by NAESB WEQ membership.

Once the recommendation is approved by the NAESB WEQ EC, the IDC Association will begin making preparations for the field test. Before the initiation of the field test, the IDC Association has specified a need for twelve to eighteen months to make preparations for the field test. These preparations include the development of a test plan and working with OATI, the software vendor for the IDC tool, to draft and execute a change order for the modifications needed to implement PFV in the IDC tool in addition to testing the software.

### **The Parallel Flow Visualization Field Test**

NAESB, NERC, and the IDC Association recognize the importance of coordination during the field test to ensure not only the success of the field test but also the success of PFV as a viable solution to support the industry's enhancement of the current TLR process. In recognition of this, the three organizations have agreed to continue coordination efforts before, during, and after the field test.

#### Proposed Field Test under NERC

As originally conceived, the field test was to be resumed after NAESB completed work on the NAESB PFV Permanent Solution and would have been conducted by the NERC IDCWG under the supervision and guidance of the NERC ORS. The responsibility to create a plan for the field test and to execute the field test would have been the sole purview of NERC as the owner and manager of the IDC tool. While the NERC ORS had discussed utilizing the informal coordination relationship that previously existed between the NAESB WEQ BPS and the NERC IDCWG to solicit input from the NAESB WEQ BPS on the commercial metrics of the test plan, NERC did not have an obligation to seek assistance from NAESB on any aspect of the testing.

After the field test was concluded, the NERC ORS would have provided NAESB with a report summarizing the results on the commercial metrics that were tested. This summary would have had been reviewed by NAESB to determine if the field test demonstrated increased accuracy of flowgate flows and visibility, if the new method for calculating generation to load impact was an improvement over the old method, and if there were any unintended market consequences. Once the evaluation was completed, the NAESB WEQ BPS would have made any needed changes or modifications to the standards and a recommendation containing those revisions would have been presented to the NAESB WEQ EC. If approved, the recommendation would have been submitted for NAESB WEQ membership ratification and included in the next version of the NAESB WEQ Business Practice Standards.

While NERC had not yet begun to make preparations for the field test on the NAESB PFV Permanent Solution prior to the IDC Association assuming ownership and management of the IDC tool, NERC did spend approximately twenty-two months making preparations for the initial field test on the NERC PFV Proposal. Of those twenty-two months, the NERC IDCWG spent approximately eleven months working with OATI, to develop a change order identifying the needed modifications to the IDC tool for PFV. After the change order was completed, an additional eleven months was spent to test the software modifications and create the test plan for the field test.

Similar timing requirements could have been anticipated had NERC conducted the field test on the NAESB PFV Permanent Solution.

#### Field Test under IDC Association

Now that the IDC tool is managed by the IDC Association and the IDCWG no longer reports to the NERC ORS, the responsibility for conducting the field test has shifted to the IDC Association. Under this arrangement, NAESB's role in the field test has not changed as neither the NAESB WEQ EC nor the NAESB WEQ BPS have the ability to dictate the parameters or criteria for the field test, just as if the field test was under NERC's control. The decision concerning the level of coordination for the field test between NAESB and the IDC Association and NERC and the IDC Association belongs to the IDC Association. At this time, the IDC Association has indicated it will seek the input of both the NAESB WEQ BPS and the NERC ORS to determine the commercial and reliability metrics that will be included in the test plan developed by the IDCWG. The involvement of NAESB and NERC will help ensure the metrics of the field test are accurately designed to aid in the assessment of the commercial and reliability viability of the NAESB PFV solution.

After the NAESB WEQ EC has taken action to approve the recommendation from the NAESB WEQ BPS on the NAESB PFV solution, the IDC Association will begin to make preparations for the PFV field test. The field test preparation period will likely last between twelve and eighteen months. During this time period, the IDC Association IDCWG will work with OATI, to identify the modifications that will need to be made to the IDC tool to implement the NAESB PFV solution. OATI will then develop a change order for those software modifications and once approved and funded by the IDC Association, take the necessary steps to test the new and modified functionalities and implement the change order. The IDC Association is dependent upon OATI completing these actions before the field test can begin. Additionally during this time, the IDCWG will develop the test plan. NAESB and NERC are committed to assisting in the preparations for the field test as deemed necessary by the IDC Association

NAESB, NERC, and the IDC Association have agreed to continue the coordination relationship during and after the field test. The field test is expected to be conducted for a period of twelve to eighteen months. Continued coordination between the NAESB WEQ BPS, the NERC ORS, and the IDCWG will be important during the testing process, as modifications to the test plan may be necessary to ensure the success of the field test and the value of the associated data. NAESB will submit status reports to the Commission to provide periodic updates on the field test activity, including any modifications made to the NAESB WEQ Business Practice Standards during the field test.

At the conclusion of the field test, the IDC Association should provide a report to NAESB containing the results of the commercial metrics that were tested during the field test for evaluation by the NAESB WEQ BPS. NAESB, the NERC ORS, and the IDC Association will work together to address any adverse, unintended reliability impacts that may result during the field test. If the NAESB WEQ BPS determines further modifications are needed to the standards, a revised recommendation will be presented to the NAESB WEQ EC for approval. Once the recommendation is approved, the standards will be submitted to NAESB WEQ membership for ratification. After

the ratification period has concluded, NAESB will make a filing with the Commission containing the ratified NAESB WEQ Business Practice Standards for the NAESB PFV Permanent Solution.

### **Timeline for the Future of the Parallel Flow Visualization Project**

Below is a timeline for the future of the PFV project, assuming the NAESB WEQ BPS completes the recommendation as anticipated:

- October 21, 2014 – The recommendation of the NAESB WEQ BPS for the NAESB PFV Permanent Solution is presented to the WEQ EC for consideration. If approved, this will initiate the full-staffing process and the standards will be held in abeyance while the field test is conducted. This date assumes the NAESB WEQ BPS takes action to vote on finalizing the recommendation in either its August 6 – 7, 2014 or September 3 – 4, 2014 meetings.
- October 2014 to October 2015/March 2016 – During this time period, NAESB, NERC, and the IDC Association will coordinate to develop the test plan, and the IDC Association will work with OATI to determine, implement, and test the modifications to the IDC tool software necessary for the field test to be executed.
- October 2015/March 2016 to October 2016/October 2017 – Given the current timing requirements to prepare for the field test, the earliest date the field test could begin is October 2015. The end date of the field test will vary dependent on the start date and the determination of the length of the field test. Assuming eighteen months are needed to make test preparations and eighteen months are needed to conduct the field test, the end date of the field test could be as late as October 2017. During this phase, NAESB will submit periodic status reports to the Commission to provide the Commission with information on testing activities and progress.
- During and after the conclusion of the field test, the NAESB WEQ BPS, the NERC ORS, and the IDC Association will work together to address any adverse reliability impacts. The NAESB WEQ BPS will evaluate the report on the commercial metrics provided by the IDC Association to determine if there are any adverse or unintended commercial impacts. If revisions to the NAESB WEQ Business Practices are deemed to be necessary by the NAESB WEQ BPS, a revised recommendation for the NAESB PFV Permanent Solution will be presented to the WEQ EC. If the WEQ EC takes action to adopt the recommendation, the standards will be submitted for NAESB WEQ membership ratification. Once ratified, NAESB will file the ratified business practices with the Commission.

NAESB, NERC, and the IDC Association have indicated willingness to attempt to meet the changing needs of the industry by modifying the current TLR process through the PFV effort. This informational filing outlines the activities, resources, and responsibilities each organization has voluntarily committed to ensuring the NAESB PFV Permanent Solution is fully vetted and responsive to the industry's request to improve the TLR

process. NAESB will continue to provide the Commission with timely status reports regarding the progress of the PFV effort.