Scope Document
For
NERC Operate Within Interconnection Reliability Operating Limits (IROLs)

NAESB Standard Request # R30317 In Coordination With Input from the NERC Market Committee

The North American Electric Reliability Council has sought to establish an industry reliability standard for establishing requirements for the operation of the interconnected bulk power system within specified operating limits to avoid uncontrolled cascading outages over a wider area that could threaten the reliability of the bulk transmission network. NAESB's Standards Review Subcommittee seeks to establish companion standard business practices to complement the reliability requirements to be set forth by NERC.

NERC Proposed Standard(s) and date:
200 – Operate Within Interconnection Reliability Operating Limits, July 1, 2003
201 - Interconnection Reliability Operating Limit Identification, July 1, 2003
202 – Monitoring, July 1, 2003
203 – Analyses and Assessments, July 1, 2003
204 –Actions, July 1, 2003
205 – Data Specification & Collection, July 1, 2003
206 – Data Provision, July 1, 2003
207 – Action Plan, July 1, 2003
208 – Reliability Authority Directives, July 1, 2003

Description and Background

The proposed NERC Reliability standard seeks to prevent instability, uncontrolled Separation, or cascading outages that adversely impact the reliability of the bulk transmission system.

This NERC standard will address the following areas:
- Identification of interconnection reliability limits.
- Monitoring of the system for interconnection reliability limits.
- Analyze and assess system conditions based on monitored interconnection reliability limits.
- Specify data and collection needed for monitoring interconnection reliability limits.
- Action plan utilized by Reliability Authorities to maintain operations within interconnection reliability limits.
- Requirements apply to entities performing various electric system functions, as defined in the NERC Functional Model.

The NERC proposed standard raises the following possible business practice concerns and questions to the NAESB Executive Committee:

> NERC requires that the RCs of the bulk transmission system have in place procedures to effectively manage transactions in the event of overload on the system. These procedures may impact tariff service priorities and affect commercial market transactions that transpire both within and between markets.
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> Developing business practices for curtailment processes may entail that all transactions are tagged or follows the processes developed by NAESB's Electronic Scheduling Subcommittee.
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> There are questions on whether the development will be focused on national standard, a standard encompassing regional differences, or if the standard will be primarily a communication standard to be applicable on a national basis.
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> Regarding the list of facilities subject to the interconnection reliability operational limits, will this list be the only set of facilities employed by both NERC for reliability requirements as well as a NAESB Business Practice Standard?

The NAESB SRS and NERC MC realize the need for additional companion business practice standards beyond those currently in place surrounding control of operating limits. However, the level to which the standard should be applied remains unclear.

Reliability standards are currently in place to ensure control area operators observe reliability limits, and for the most part these limits are observed. The problem is that in order to stay within prescribed limits, control areas may be obligated to relieve congestion in their own area utilizing a set of procedures that maycause overloads in neighboring areas. Other problems arise when a control area operator has a transmission constraint on an element at the control area's border. In these instances, that control area's congestion relief procedure may employ a business or market process that meets the obligations of the reliability standards for its own control area, but may negatively impact the business or market process of the neighboring control area. These types of overloads are very difficult to control with only generation inside the control area and are best managed either by standardization of a congestion relief process or coordination of congestion relief processes of the affected control areas. Thus, the working group concludes that additional business standards are needed to avoid shifting problems from one control area to another, and to ensure effective control of constraints at the borders between control areas.

Today, in the Eastern Interconnection, the primary method for interconnected congestion management is the NERC Transmission Loading Relief TLR) process. When a control area operator needs relief on a transmission element, a TLR request is issued and transactions currently flowing in the direction of the constraint are curtailed. In some areas, most notably in areas utilizing a market driven congestion relief mechanism, TLRs are used only after all internal redispatch options have been exhausted. Others use TLRs as the first step in controlling overloaded elements. There are also plans between RTOs utilizing market relief mechanisms to redispatch resources down to appropriate levels to

ensure one RTO is not over utilizing the transmission system in a neighboring control area and thus causing the congestion. In the Western Interconnection, the primary means of operating within interconnected reliability limits involves using previously identified "qualified paths".

Because of the already existing differences between the interconnections, as described above, a single nationwide business standard for congestion management may not bepossible. On the other hand, a multitude of business standards to provide congestion relief, for transmission systems that operate in an interconnected fashion, may not lend well to facilitating transactions between markets (i.e.-Seams Issues). Further discussion and investigation are needed to determine if multiple operating philosophies are acceptable for purposes of accommodating market transactions, particularly for those transactions that cross market and Reliability Authority borders.

Regardless of the breadth of geographical coverage, the standard should address the following areas:

- Identification of interconnection reliability operating limits. Control areas / RTOs should post and maintain a list of interconnected reliability limits they operate to, so that other control areas / RTOs can maintain a copy of the list in their own systems and ensure they are prepared to adjust unit output for the limit.
- Monitoring of the system for interconnection reliability operating limits. All control areas / RTOs should be responsible for monitoring the list of interconnected reliability limits mentioned above.
- Analyze and assess system conditions based on monitored interconnection reliability limits, to determine when action needs to be taken to alter flow patterns and increase the margin on elements that are approaching their limit.
- Data collection specification. As a guide for an appropriate level of monitoring, the standard should specify data collection needed for monitoring interconnection reliability limits.
- Action plan utilized by operators to maintain operations within interconnection reliability limits. The standard should contain a checklist and procedure for operators to follow in order to implement control on interconnected reliability limits.

The standard should build off of the existing processes and procedures used in each interconnection to the extent practical. The standard should realize differences in current methods of transaction management due to market based versus non-market based areas, and cover interactions of each of these types of areas.

- Practices for management of transaction curtailment including:
  - Timing
  - Priority
  - Magnitude
  - Duration
  - Types of methodologies used
  - Informing parties of the reloads and the methodologies used

- Affected Parties communicating their agreement on the reloads.

- Possible Approaches for a NAESB Business Practice for Congestion Management

  - One option is to develop the proposed companion standard based on the methods included in the Joint Operating Agreement between PJM and MISO, to be implemented later this year. The sample is attached as Appendix A.

  - For areas that do not employ market mechanisms for congestion relief (FERC Pro Forma 888 Point-to-point service), a congestion market mechanism could be developed to relieve congestion. Some possible requirements:
    - Communication between RAs and market of pending constraints
    - Electronic bulletin board posting of prices to "buy-through" congestion (by operator and/or customers)
    - Operator driven market price to keep bi-lateral schedules based on real-time system conditions,
    - Bids and offers to displace higher priority bi-lateral transactions (assumes same path and same PTDFs (Congestion price would be based on bi-lateral schedule's PTDF)

    - Redispatch (with prices)