NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL
Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

# NERC-NAESB Joint Interface Committee Meeting

January 10, 2003 — 9 a.m. to 3 p.m.
Tampa, Florida

## Meeting Agenda

1. Welcome
    a. Introductions and Housekeeping
    b. Antitrust Statement

2. Review of the NERC-NAESB MOU and Formation **(Attachment A)**
    a. Review of development of the MOU (M. Desselle/G. Ross)

3. Election of Vice Chairs for NERC and NAESB members
    a. Role of Vice Chairs
    b. Election of Vice Chairs from each group

4. Review of Appendix A of the MOU

5. Voting Procedures Review

6. Role of Alternates

7. Sharing of Annual Plans (to be provided separately)

8. Schedule of Meetings for 2003

9. New Business
    a. Review 2 Standards Proposals from NERC (attached)
        i. "Balance Resources and Demand" **(Attachment B)**
        ii. "Operate Within Limits — Monitor and Assess Short-term Transmission" **(Attachment C)**
10. Adjourn

## Background Information for 9 a i.

### Purpose of the SAR:

To maintain Interconnection scheduled frequency within a predefined frequency profile under all conditions (i.e. normal and abnormal), to prevent unwarranted load shedding and to prevent frequency related cascading collapse of the interconnected grid.

This standard will require the use of a technically defensible mathematical method to enable each Interconnection to disburse control responsibility among its entities to achieve its targeted Interconnection frequency profile.

This standard will require that the Reliability Authority have the authority to monitor system frequency and have the authority to direct actions (to control frequency) that include load shedding.

### History

- The Balance Resources and Demand SAR was submitted by the Requestor, Jim Byrd, on January 28. This SAR was the first SAR entered into the new NERC Standards Development Process. The SAR was posted for two additional comment periods.
- The Interim SAC accepted the SAR for posting on February 5, 2002 and appointed a SARDT to work with the Requestor in refining the SAR.

### Reaching Consensus on the Need for the Proposed Standard:

Industry consensus on the need for the proposed standard was established through the comments submitted on the original posting of the SAR. Forty entities responded to the initial posting of the SAR and all but two entities indicated that a standard is needed. The negative reasons given by the two entities were:

- The original SAR was so poorly worded that it should be withdrawn
- The existing NERC Operating Policies already address the need to balance resources and demand.

### Reaching Consensus on the Scope of the Proposed Standard

The SAR was posted for three separate public comment periods:

- February 7–March 30, 2002
- June 3–July 12, 2002
- August 20–September 23, 2002

Following each posting, the SARDT met and considered the comments submitted by industry participants. After each meeting, the SARDT:

- Posted their consideration of industry comments
- Posted the revised SAR
- Posted a special SAR comment form designed to capture additional information on the need for additional changes to the SAR.

While there have been many minor changes to the original SAR to ensure that its purpose and intent is clearly understood, the most significant change to the SAR was the deletion of one of the original requirements, frequency response measurement (FRM). The majority of industry participants indicated

that they did not want an FRM included in this standard. Several commenters indicated that FRM can not be objectively measured. Some commenters expressed a minority opinion that, without attention to FRM, there could be a significant gap in frequency control. The SARDT sent a request, through the NERC Director of Standards, to the NERC Resources Subcommittee (RS), asking the RS review to review the comments submitted by industry participants, and to conduct some additional research into the feasibility of developing an objective measure for FRM that could be applied under the Functional Model. If the RS finds that there is a need for FRM and that there is a way of objectively measuring FRM, then the RS has been asked to submit a separate SAR with an FRM requirement.

The Balance Resources and Demand SARDT has refined the SAR so that industry consensus has been reached on the need for the proposed standard and also on the scope of the standard. The SARDT feels that additional work on refining this SAR will not make a significant improvement in the level of industry consensus.

## Background Information for 9.a.ii

### Purpose of this SAR:

The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

This standard will require adherence to established operating limits identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Requirements shall address:

– Real time monitoring of system parameters against operating limits
– Performing short-term and real-time transmission reliability analyses relative to the identified operating limits
– Performing corrective actions to mitigate exceeding operating limits
– Keeping records and filing reports

### History

- The Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits SAR was submitted by the Requestor, Jim Byrd, on March 7, 2002.
- The Interim SAC accepted the SAR for posting on March 20, 2002 and appointed a SARDT to work with the Requestor in refining the SAR.

### Reaching Consensus on the Need for the Proposed Standard

Industry Consensus on the need for the proposed standard was established through the comments submitted on the original posting of the SAR. More than fifty entities responded to the initial posting of the SAR and almost all entities indicated that this standard is needed.

### Reaching Consensus on the Scope of the Proposed Standard

The SAR was posted for two separate public comment periods:

- April 2–May 3, 2002
- August 20–September 23, 2002

Following each posting, the SARDT met and considered the comments submitted by industry participants. After each meeting, the SARDT:

- Posted their consideration of the industry's comments
- Posted the revised SAR
- Posted a special SAR comment form designed to capture additional information on the need for additional changes to the scope of the SAR.

The Monitor and Assess Short-term Transmission Reliability — Operate Within Transmission Limits SARDT has refined the SAR so that industry consensus has been reached on the need for the proposed standard and also on the scope of that standard. The SARDT feels that additional work on refining this SAR will not make a significant improvement in the level of industry consensus.

**Memorandum of Understanding between**
**North American Energy Standards Board and North American Electric Reliability Council**

This Memorandum of Understanding ("MOU") is entered into this 30th day of November, 2002, between the North American Energy Standards Board ("NAESB") and the North American Electric Reliability Council ("NERC") (collectively, "Parties").

Whereas NAESB is the primary industry forum for development and promotion of business practice and electronic communication standards in North American wholesale and retail natural gas and electricity markets;

Whereas NERC is the primary industry organization for developing reliability standards for the reliable operation and planning of the bulk electric systems serving North America;

Whereas the Parties agree that there is a need to develop and maintain standards to enhance energy markets and maintain reliability throughout North America;

Whereas the Federal Energy Regulatory Commission ("FERC") has "strongly urged" the Parties to coordinate their standards development efforts;

Whereas most standards have both business and reliability implications and range along a continuum from "predominantly reliability" in nature to "predominantly business" in nature;

Whereas the Parties agree that a coordination process should be developed between the Parties to ensure that business practice and reliability standards are harmonized and that every practicable effort is made to eliminate overlap and duplication of efforts;

Whereas, the Parties agree that the coordination that takes place under this MOU should not delay the development of standards;

Whereas, the Parties shall not be obliged to change their existing standards approval processes, but the parties agree it would be beneficial to keep an open mind for future changes to

be considered that would improve the processes and achieve the goals contained within this MOU; and,

Whereas, the Parties intend this MOU to be a living document and recognize that the coordination procedures detailed in this MOU are likely to require revision as the Parties gain experience working under these procedures,

Now therefore, the Parties agree as follows:

## 1. Purpose and Principles of Agreement

1.1 The Parties propose to establish a coordination process set forth in Section 2 of this MOU. The coordination process is intended to produce reliability standards and business practice standards as efficiently as possible. The coordination process will accomplish this primarily through the creation of the Joint Interface Committee ("JIC") comprised of representative members of NERC and NAESB. The creation of the JIC is not intended to create delay in standards development, but to facilitate efficient standards development and avoid duplication of effort between the Parties.

1.2 The Parties recognize that most standards have both reliability and business standards and communication protocols implications. Accordingly, the JIC will evaluate each standard development proposal[1] with this recognition in mind to determine whether NAESB or NERC should develop the proposed standard.[2]

[1] The JIC is not limited to new standards but can receive existing proposed standards referred to it by either Party.
[2] While the JIC will evaluate the disposition of standards with the recognition that most standards have both reliability and business standards and communication protocols implications, the intent of NERC and NAESB (through the JIC) is that the coordination process should work toward the development of "standards for the industry" and avoid characterizing standards, wherever possible.

1.3 The Parties intend to have the coordination process set forth in Section 2 of the MOU in full operation by January 1, 2003. The Parties may mutually agree to move the start date for the coordination process.

## 2. Coordination Process

2.1 The Parties agree to establish a coordination process, as set forth in this section, for coordinating the development of proposed standards, in accordance with the principles in Section 1 of this MOU.

2.2 The JIC shall be responsible for the coordination process. The JIC shall be composed of representatives from NERC holding 50 % of the votes and representatives from NAESB WEQ holding 50 % of the votes. Each Party will determine its representatives to the JIC, with every effort to have each segment represented. The quorum necessary for the transaction of business at meetings of the JIC shall be both a majority of the NERC representatives and a majority of the NAESB representatives. Any or all members of the JIC may participate in a meeting, including being counted as part of the quorum, by means of a communication system by which all persons participating in the meeting are able to hear each other. Use of notational balloting or proxies will not be permitted. NERC and NAESB will separately determine whether designated alternates will be permitted to participate in place of their absent JIC representatives. The JIC will have co-chairs, one representing NERC and one representing NAESB, chosen by each Party from among its JIC representatives.

2.3 Decisions of the JIC will be by a simple majority vote, with each NERC representative present at a meeting having a vote equal to 50% divided by the number of NERC representatives participating in the meeting and each NAESB representative having a vote equal

to 50% divided by the number of NAESB representatives participating in the meeting. Appendix C to this MOU contains illustrative examples of this voting allocation. In the event of a tie vote, the matter will be referred to the Chairmen of the Parties [or their Board level designee(s)] for resolution.

2.4 The JIC will meet as necessary to review each Standards Authorization Request ("SAR") that the Standards Authorization Committee ("SAC") of NERC has approved for the drafting of a standard and each standard request that the NAESB Executive Committee ("EC") has assigned to the Wholesale Electric Quadrant ("WEQ") of NAESB. The JIC will determine whether a particular standard should be developed by NERC or by NAESB, based upon the coordination guidelines in Appendix A of this MOU, as they may be revised from time to time.

2.5 The JIC will make its determination on each standard development proposal by the end of the month subsequent to the month in which the standard development proposal is referred to the JIC. The JIC may prioritize submitted proposals if there are urgent reliability or business implications.

2.6 Once the JIC has assigned a standard development proposal to one of the Parties, that Party will then develop the proposed standard through its existing standards development process. The other Party shall assume an advisory-only role, although its members and constituents are strongly encouraged to actively participate in the development process by participating in subcommittee, task force and working group deliberations as well as offering comments and recommendations on any and all aspects of the proposed standard.

2.7 All interested individuals and entities are invited and encouraged to participate to the maximum extent possible consistent with membership or registration requirements in NERC

and NAESB standards development activity. Neither organization places any membership or registration requirement on the submission of comments on draft proposed standards.

2.8 Either the determination of the JIC or the resolution reached in the event of a tie vote becomes final after thirty days unless, within that thirty-day period, either Party acts to withdraw the proposal. In this event, the proposal may be redrafted and resubmitted to the JIC or the Parties shall meet to attempt to resolve the impasse. Should further consideration not result in a final determination, either party may act consistent with its own standards development process.

## 3. Filings With Governmental Authorities

3.1 Each Party shall be responsible for making filings with governmental authorities of the standards that it develops, as appropriate.

3.2 All filings must include, verbatim, any comments submitted by the Party that did not develop the standard, as well as the comments of other interested parties.

## 4. Information Exchange

4.1 NERC will inform NAESB each year of its projected standards development activity for the coming year and of any additional planned activity as it arises. NAESB will inform NERC of the WEQ annual plan each year and of any amendments to the WEQ annual plan as they arise. After exchange of this information, the Parties agree to meet to address any apparent areas of duplicate effort as soon as practical.

4.2 With respect to each particular request for a standard or standard development action, each Party will promptly inform the other of the action, or the request in sufficient detail

to convey the subject matter and timeline for resolution of such action or request. See Appendix B.

## 5. Costs

5.1 Each Party shall bear its own costs.

## 6. Reevaluation

6.1 The Parties agree to meet annually during the anniversary month of the signing of this MOU to evaluate in good faith the effectiveness and efficiency of this MOU in meeting the goal of coordinating the standards development activity of the two organizations and to make any appropriate revisions.

6.2 The Parties may also agree to revise this MOU, including the appendices, at any other time as mutually agreeable.

## 7. Termination

7.1 Either Party may withdraw from this MOU upon 60 days' written notice to the other Party and to the FERC or other appropriate jurisdictional regulatory authorities. Prior to the withdrawal becoming effective, the Parties agree to meet to discuss whether changes to this MOU would address the reasons prompting the withdrawal.

## 8. Miscellaneous

8.1 This MOU constitutes the entire agreement between the Parties with respect to establishing a coordination standards development process for new proposed wholesale electric

industry standards and supersedes all prior understandings, proposals, negotiations and communications, oral or written, between the parties or their representatives with respect to such subject matter.

8.2 This MOU may be executed in counterparts each of which shall be deemed an original and all of which together shall constitute one instrument.

8.3 Neither Party shall be liable for any indirect, special, incidental or consequential damages arising in any way from any performance or failure to perform under this MOU.

8.4 The Parties agree that they will create a process whereby the notice of JIC activities and documents are posted on a web site for public access.

AGREED TO this 30th day of November, 2002.

NORTH AMERICAN ENERGY STANDARDS BOARD

By: _____

NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

By: _____

## APPENDIX A

## JIC Coordination Guidelines

The coordination guidelines for use by the JIC as a starting point, under paragraph 2.4 of the NERC-NAESB MOU, are based in part upon NERC's Functional Model[3] and in part upon market criteria developed by NAESB. Once the JIC convenes and as it gains more experience alternative coordination guidelines may be developed and used as the JIC sees fit.

In general, the functions identified in the functional model diagrams as "generator" (whether merchant or load-affiliated), "purchasing-selling entity," "load-serving entity," "market operator," "customer aggregator," and certain of the relationships and information flows of "transmission service provider," "transmission owner," and "transmission operator" are associated with how wholesale electric business practices and electronic communication protocols are developed for use by market participants. Additionally, market criteria such as product or service definitions, specifications, and compensation; prerequisites for participation in market and identification of costs and funding obligations; arrangements for product and service delivery to customers; creditworthiness requirements; related market design issues; market settlement practices; and communication protocols in support of market criteria should be considered. Standard development proposals applicable to those functions and to the relationships and information flows among those functions normally would be assigned to NAESB, regardless of where the original request for the standard was filed.

In general, the functions identified in the functional model diagrams as "reliability authority," "balancing authority," "interchange authority," "compliance monitor," "NERC," and certain of the relationships and information flows of "transmission service provider," "transmission owner," and "transmission operator" are associated with the reliable operation of the bulk power system. Standard development proposals applicable to those functions and to the relationships and information flows among those functions normally would be assigned to NERC, regardless of where the original request for the standard was filed.

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[3] A PowerPoint display of NERC's Functional Model may be downloaded at http://www.nerc.com/~filez/fmrtg.html. The Functional Model identifies and defines the functions, associated responsibilities, and the relationships and information flows among those functions, that are necessary for electric systems to operate reliably and for participants in wholesale electricity markets to transact business efficiently, independent of which entities perform which functions.

Where a single standard development proposal meets the coordination guidelines for assigning it to either NERC or NAESB, and the proposal is not more properly recast in an alternative format, the JIC should normally assign the proposal to either NERC or NAESB based upon the following factors:

a. Regulatory direction to one organization or the other;
b. The relative portion of the proposal that would be associated with the reliable operation of the bulk power system (NERC) vs. how wholesale electricity business is transacted (NAESB);
c. The priority of the proposal and the ability of either organization to take on and complete the standard development in a timely manner, given its other workload; and
d. Whether the proposal includes a significant reliability compliance element.

APPENDIX B
Current Notification Criteria

| NERC | NAESB |
|---|---|
| a. Receipt of a Standard Authorization Request ("SAR"). | a. Decision by NAESB Executive Committee ("EC") to assign a standard request to the WEQ and referral to a subcommittee. |
| b. SAC reviews standard request. | b. Notify NERC of standard request. |
| c. Notify NAESB of SAR Posting. Posting of SAR for comment. | c. Standard request forwarded to JIC for review and organization assignment. |
| d. Authorization by SAC to draft standard. | d. Activities of subcommittee. |
| e. Standard request forwarded to the JIC for review and organization assignment. | e. Posting of draft standard for public comment. |
| f. Activities of Standards Drafting Team. | f. Submission of draft standard and public comments to EC. |
| g. Posting of draft standard for public comment. | g. Decision of EC. |
| h. Decision that draft standard is ready for ballot. | h. Action by NAESB Board of Directors. |
| i. Submission of draft standard for ballot. | i. Filing the standard with governmental regulatory authorities. |
| j. Ballot results. | |
| k. Action by NERC Board of Trustees. | |
| l. Filing the standard with governmental authorities. | |

APPENDIX C

JIC Voting Examples

(Quorum requirement: Both a majority of the NAESB representatives and a majority of the NERC representatives.)

Example 1:

1. The JIC is composed of: 5 representatives from NAESB
   9 representatives from NERC
2. All JIC members are in attendance at the meeting – quorum requirement is met.
3. Each group gets 50% of the vote, which means that each NAESB JIC member gets 10% of the total vote (5 representatives times 10% = 50%), and each NERC JIC member gets 5.55% of the total vote (9 representatives times 5.55% = 50%). When the votes are cast on an issue, the percentages cast are totaled and if the votes in favor of an issue exceed 50%, the issue is considered adopted.

Example 2:

1. The JIC is composed of: 5 representatives from NAESB
   9 representatives from NERC
2. 3 NAESB JIC members and 5 NERC JIC members are in attendance at the meeting – quorum requirement is met.
3. Each group gets 50% of the vote, which means that each NAESB JIC member gets 16.66% of the total vote (3 representatives times 16.66% = 50%), and each NERC JIC member gets 10% of the total vote (5 representatives times 10% = 50%). When the votes are cast on an issue, the percentages cast are totaled and if the votes in favor of an issue exceed 50%, the issue is considered adopted.

The two examples above illustrate the importance to the organizations for the JIC members to attend the JIC meetings.

| | |
|---|---|
| Title of Proposed Standard | Balance Resources and Demand |
| Request Date | January 28, 2002 |
| ID | BAL_RES_&_DEMND_01_04 |
| Authorized for 1st posting | February 5, 2002 |
| Authorized for development | |

| **SAR Requestor Information** | | **SAR Type** (Put an 'x' in front of one of these selections) | |
|---|---|---|---|
| Name James Byrd (Albert DiCaprio as substitute for Mr. Byrd) | | x | New Standard |
| Primary Contact Albert DiCaprio | | | Revision to existing Standard |
| Phone 610 666-8854 | Fax 610 666-4282 | | Withdrawal of existing Standard [1] |
| e-mail dicapram@pjm.com | | | Emergency Action |

**Purpose/Industry Need**

To maintain Interconnection scheduled frequency within a predefined frequency profile under all conditions (i.e. normal and abnormal), to prevent unwarranted load shedding and to prevent frequency-related cascading collapse of the interconnected grid.

**Brief Description**

Maintain Interconnection frequency performance within a targeted frequency profile as demonstrated through control performance measures.

This standard will require the use of a technically defensible mathematical method to enable each Interconnection to disburse control responsibility among its entities to achieve its targeted Interconnection frequency profile.

This standard will require that the Reliability Authority have the authority to monitor system frequency and have the authority to direct actions (to control frequency) that include load shedding.

[1] Requests to Withdraw an existing Organization Standard only require that this page be completed.

## *Reliability Functions*

| **The Standard will Apply to the Following Functions** *(Put an 'X' in front of each one that applies)* | | |
|---|---|---|
| x | Reliability Authority | Ensures the reliability of the bulk transmission system within its Security Authority Area. This is the highest reliability authority. |
| x | Balancing Authority | Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time |
| | Interchange Authority | Authorizes valid and balanced Interchange Schedules |
| | Planning Authority | Plans the bulk electric system |
| | Transmission Service Provider | Provides transmission services to qualified market participants under applicable transmission service agreements |
| | Transmission Owner | Owns transmission facilities |
| | Transmission Operator | Operates and maintains the transmission facilities, and executes switching orders |
| | Distribution Provider | Provides and operates the "wires" between the transmission system and the customer |
| | Generator | Owns and operates generation unit(s) or runs a market for generation products that performs the functions of supplying energy and Interconnected Operations Services |
| | Purchasing-Selling Entity | The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required. |
| | Load-Serving Entity | Secures energy and transmission (and related generation services) to serve the end user |

## *Reliability and Market Interface Principles*

| **Applicable Reliability Principles** *(Put an 'x in front of all that apply)* | |
|---|---|
| x | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions. |
| x | 2. The frequency of interconnected bulk electric systems shall be controlled within defined limits through the balancing of electric supply and demand |
| x | 3. Information necessary for planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably |
| x | 4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented |
| x | 5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems |
| x | 6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions |
| x | 7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis |
| **Does the proposed Standard comply with all of the following Market Interface Principles?** *(Enter 'yes' or 'no')* | yes |
| 1. Interconnected The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure | |
| 4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard | |
| 5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards | |

**Detailed Description**

This Standard requires that each Balancing Authority maintain a close match between its resources and demand in real time.

The Standard requires that the Reliability Authority monitor system frequency and Balancing Authority activities and direct action when the Reliability Authority determines that the interconnected electric system is at risk.

The Standard accomplishes this through measures that cover various time frames and situations:

- Control Performance Measure 1 (CPM1) – CPM1 measures the Balancing Authority's one-minute average Area Control Error with respect to Interconnection frequency. Compliance with CPM1 helps maintain Interconnection frequency on schedule.
- Control Performance Measure 2 (CPM2) – CPM2 measures the Balancing Authority's 10-minute average Area Control Error. Compliance with CPM2 helps bound net interchange power flows that can cause transmission operating limit violations.
- Disturbance Control Measure (DCM) – DCM requires that the deficient BA return to an acceptable balance level within a defined period, following a sudden generation or load change. This measure requires the responsible Balancing Authority to quickly return its Area Control Error to an acceptable level.

*(Note: The proposed CPM1 is equivalent to CPS1, CPM2 is the equivalent of CPS2, and DCM is equivalent to DCS, covering identical time horizons. However, the industry may request changes to these measures, through posted comments on this SAR or the draft standard.)*

### *Related Standards*

| Standard No. | Explanation |
|---|---|
| | |

### *Related SARs*

| SAR ID | Explanation |
|---|---|
| COOR INTERCHNG_01_01 | The "Coordinate Interchange" SAR addresses the coordination of data exchange associated with transactions and may have some requirements that interface with the "Balance Resources and Demand" SAR. |
| FACILITY_RATINGS_01_01 | The "Determine Facility Ratings, Operating Limits, and Transfer Capabilities" SAR identifies how operating limits are established. The operating limits established within this proposed standard will interface with the performance standards within the "Balance Resources and Demand" SAR. |
| OPER_WITHN_LMTS_01_01 | The "Monitor and Assess Short Term Reliability, Operate Within Limits" SAR identifies requirements for operating within limits in real time and may interface with some of the requirements for the "Balance Resources and Demand" SAR. |
| ABNML_&_EM_COND_01_01 | The "Prepare for and Respond to Abnormal or Emergency Conditions" SAR identifies requirements for recognizing and responding to emergency conditions and may interface with some of the requirements for the "Balance Resources and Demand" SAR. |

### *Regional Differences*

| Region | Explanation |
|---|---|
| ECAR | ECAR has Non-conforming Loads which need to be considered |
| ERCOT | CPM2 will not apply to ERCOT. |
| FRCC | none |
| MAAC | none |
| MAIN | none |
| MAPP | none |
| NPCC | NPCC requires compliance with Operating Reserve requirements |
| SERC | none |
| SPP | none |
| WECC | WECC requires compliance with Operating Reserve requirements |

### *Interconnection Differences*

| Interconnection | Explanation |
|---|---|
| Eastern | Epsilon 1 |
| Western | Epsilon 1 |
| ERCOT | Epsilon 1, CPM2 will not apply to ERCOT |

### *Implementation Plan (Preliminary)*

Additional details of the implementation plan will be developed as the standard is drafted

| Description |
|---|
| **The following sections of Operating Policies should be retired when this standard is implemented:**<br>Policy 1 – Generation Control and Performance<br>Section D. Time Control<br>Section E. Performance Standard<br>Section G. Control Surveys<br>Requirement 1.3 CPS and DCS surveys<br>Appendix 1D Time Error Correction Procedures<br>Performance Standard Training Document<br>C. Calculation of Compliance<br>D. Survey Procedures |

### *Team Assignments*

"Balancing Resources and Demand" SAR Drafting Team:

Chairman: Carl Monroe

Secretary: Tom Vandervort

Requestor: Jim Byrd (Albert DiCaprio as substitute)

Industry Representatives:

| | |
|---|---|
| Stan Kopman | Bob Dintelman |
| Bill Blevins | Gary Jackson |
| Al DiCaprio | Mark Henry |

## *Standard Authorization Request (SAR) Form*

| | |
|---|---|
| Title of Proposed Standard: | Monitor and Assess Short-term Reliability - Operate Within Transmission System Limits - |
| Request Date: | March 7, 2002 |
| Authorized for Posting: | March 20, 2002 |
| SAR ID# : | OPER_WITHN_LMTS_01_03 |

| ***SAR Requestor Information*** | | ***SAR Type*** *(Put an 'x' in front of one of these selections)* | |
|---|---|---|---|
| Name: | Jim Byrd (Al DiCaprio as substitute) | X | New Standard |
| Primary Contact: | Al DiCaprio | | Revision to existing Standard |
| Telephone: | 610 666-8854 | | Withdrawal of existing Standard |
| Fax: | 610 666-4282 | | |
| e-mail: | dicapram@pjm.com | | Emergency Action |

***Purpose/Industry Need***

The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

***Brief Description***

This standard requires adherence to established operating limits[1] identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
Requirements shall address:

- Real time monitoring of system parameters against operating limits
- Performing short-term and real-time transmission reliability analyses relative to the identified operating limits
- Performing corrective actions to mitigate exceeding operating limits
- Keeping records and filing reports

[1] These are the limits established through the standard, "Determine Facility Ratings, Operating Limits and Transfer Capabilities"

## *Reliability Functions*

| ***The Standard will Apply to the Following Functions*** (Put an 'X' in front of each one that applies) | | |
|---|---|---|
| X | Reliability Authority | Ensures the reliability of the bulk transmission system within its Security Authority Area. This is the highest reliability authority. |
| | Balancing Authority | Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time |
| | Interchange Authority | Authorizes valid and balanced Interchange Schedules |
| | Planning Authority | Plans the bulk electric system |
| | Transmission Service Provider | Provides transmission services to qualified market participants under applicable transmission service agreements |
| | Transmission Owner | Owns transmission facilities |
| X | Transmission Operator | Operates and maintains the transmission facilities, and executes switching orders |
| | Distribution Provider | Provides and operates the "wires" between the transmission system and the customer |
| | Generator | Owns and operates generation unit(s) or runs a market for generation products that performs the functions of supplying energy and Interconnected Operations Services |
| | Purchasing-Selling Entity | The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required. |
| | Load-Serving Entity | Secures energy and transmission (and related generation services) to serve the end user |

## *Reliability and Market Interface Principles*

| | |
|---|---|
| ***Applicable Reliability Principles*** (Put an 'x in front of all that apply) | |
| X | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions. |
| | 2. The frequency of interconnected bulk electric systems shall be controlled within defined limits through the balancing of electric supply and demand |
| X | 3. Information necessary for planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably |
| | 4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented |
| X | 5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems |
| X | 6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions |
| X | 7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis |
| **Does the proposed Standard comply with all of the following Market Interface Principles?** *(Enter 'yes' or 'no')* | Yes |
| 1. Interconnected The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure | |
| 4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard | |
| 5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards | |

***Detailed Description***

This standard requires that the Reliability Authority and Transmission Operator adhere to established operating limits.
Requirements shall address:

- Real time monitoring of system parameters against operating limits
  - Monitor parameters that indicate the current state of the transmission system
  - Monitor parameters that indicate the current state of tie lines to other systems and of the overall interconnected transmission system
- Performing short-term and real-time transmission reliability analyses relative to the identified operating limits
  - Collect data needed for performing real time reliability analyses
  - Conduct an operating assessment to identify limiting facilities
- Performing corrective actions to mitigate exceeding operating limits
  - Have a documented mitigation plan
  - Implement mitigation plan where necessary
- Keeping records and filing reports
  - Document instances of exceeding identified operating limits
  - Log violations and maintain records for the retention period
  - Report information to NERC based on specified criteria (e.g. magnitude, duration, type of violation, instances of exceeding limits[2])

## *Related SARs*

| *SAR ID* | *Explanation* |
|---|---|
| FACILITY_RATINGS_01_01 | The "Determine Facility Ratings, Operating Limits, and Transfer Capabilities" SAR identifies how operating limits are established. The operating limits established within this proposed standard are referenced in the proposed "Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability" standard. |
| COORD_OPERATONS_01_01 | The "Coordinate Operations" SAR identifies what reliability-related information to exchange between Functions. Some of the information collected within the proposed "Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability" standard will be used in the proposed "Coordinate Operations" standard. |
| ABNML_&_EM_COND_01_01 | The "Prepare for and respond to Abnormal or Emergency Conditions" SAR will be implemented where this one stops. The two SARs are related. |

[2] If an area bounces over a limit, whether it is caused by a contingency or not, this doesn't need to be reported to NERC as long as the area re-prepares within the NERC guidelines. If the NERC criteria are not met, then these violations should be reported.

## *Regional Differences*

| *Region* | *Explanation* |
|---|---|
| ECAR | None identified |
| ERCOT | None identified |
| FRCC | None identified |
| MAAC | None identified |
| MAIN | None identified |
| MAPP | None identified |
| NPCC | None identified |
| SERC | None identified |
| SPP | None identified |
| WECC | None identified |

## *Interconnection Differences*

| *Interconnection* | *Explanation* |
|---|---|
| Eastern | None Identified |
| Western | None Identified |
| ERCOT | None Identified |

## *Implementation Plan*

| **Description** |
|---|
| ***The following sections of Operating Policies should be retired when this standard is implemented:***<br>Policy 2 – Transmission<br>– Standard A.1.<br>– Standard A.1.1.<br>– Standard A.I.2<br>– Standard A.2.<br>– Standard A.2.1.<br>– Standard A.2.2.<br>– Requirement A.1.<br>– Requirement A.1.1.<br>– Requirement A.1.2.<br>– Requirement B.1.<br>– Requirement B.5.<br><br>Policy 9 – Security Coordinator Procedures<br>– Introduction – Introductory paragraph and second and third bullets<br>– Requirement A.1.<br>– Requirement A.1.2.<br>– Requirement C. 3.1.<br>– Requirement C.3.2.<br>– Requirement C.3.2.1.<br>– Requirement C.3.2.1.1.<br><br>Policy 4 – System Coordination<br>– Section A *(Section A needs careful scrutiny by numerous SAR Drafting Teams)*<br><br>Policy 5 – Emergency Operations<br>– Section C<br>– Section D |

| ***SAR Drafting Team*** | |
|---|---|
| ***Chairman*** | James Case |
| ***Secretary*** | Tom Vandervort |
| ***Requestor*** | Jim Byrd/Al DiCaprio |
| ***Industry Representatives*** | Daniel Boezio<br>Timothy Cronin<br>Roger Farrugia<br>Mark Fidrych<br>Tony Jankowski<br>Drew Kovalak<br>Bill Lundin<br>Ellis Rankin<br>Edward Riley<br>Richard Schneider<br>Toni Timberman<br>Stanley Williams |