

# NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

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Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

## **“Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR Drafting Team Meeting**

August 7, 2002  
Chicago, Illinois

### **Minutes**

The first meeting of the North American Electric Reliability Council “Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR Drafting Team was held on August 7, 2002 in Chicago, Illinois. The meeting announcement, agenda and attendance list are attached as **Exhibits A, B, and C** respectively.

Chairman James Case presided over the meeting. Secretary Tom Vandervort announced that a quorum was present.

### **Minutes of the Previous Meeting**

This was the first “Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR Drafting Team meeting, therefore, there were no minutes to approve.

### **Review Duties and Tasks of SAR Drafting Team Members**

Standards Process Manager, Maureen Long, discussed the tasks of the first “Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR Drafting Team.

- Assist in the refinement of the SAR
- Participate in Industry Forums
- Assist in responding to posted comments

Each team member’s role was addressed (i.e. the chairman, secretary, and industry representatives). The team will work towards consensus on issues and concerns. However, if a vote is needed, the team will follow a defined voting methodology. A quorum requires 2/3 of the voting members. Approval of any action requires a 2/3 majority of the voting members.

### **SAR Comment Review, Discussion and Revision**

The team reviewed the first “Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR public comments. If an obvious consensus of support for or against a SAR statement was present, then the team either revised, left as written, or enhanced the language of the SAR. See **Exhibit D**.

Based on the comments, the SAR Drafting Team revised the “Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR. The SAR Drafting Team also responded to the comments with response “Considerations.”

### **Posting and Comments**

The revised “Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR and the original comments / responses will be posted for review for a second round of public comment. See **Exhibit E**.

### **Special Consideration**

The SAR Drafting Team requests specific “regional differences” to the “Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR language. Regional differences should be submitted through the second round of comments.

Transmission system “coordination” is not an aspect of this SAR. Transmission System coordination will be addressed in another SAR.

### **Dates and Locations of Future Meetings**

The “Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR Drafting Team will review the second round comments and determine at a future date if and when the next meeting or conference call should be held.

Respectfully submitted,

*Tom Vandervort*

Thomas J. Vandervort  
Secretary

**Mary J. Hartsfield**

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**From:** Barbara Bogenrief  
**Sent:** Wednesday, July 17, 2002 1:20 PM  
**To:** Mary J. Hartsfield  
**Subject:** SARDT - August 6, 7, and 8, 2002 Meetings in Chicago

To: Coordinate Interchange-SARDT  
Monitor & Assess Short-term Transmission Reliability-Operate Within Limits-SARDT  
Determine Facility Ratings, Operating Limits, and Transfer Capabilities-SARDT

PLEASE RESPOND TO THIS MESSAGE WITH YOUR NAME AND COMPANY IF YOU PLAN TO ATTEND THESE MEETINGS.

Dear SAR Drafting Teams Members:

Details for the three meetings held August 6, 7 and 8, 2002 follow:

**Location:**

DoubleTree Hotel O'Hare - Rosemont  
5460 North River Road  
Rosemont, Illinois 60018  
Phone: 847-292-9100  
Fax: 847-292-9295

**Meeting Schedule:**

Tuesday, August 6, 2002 -- 8 a.m. to 4 p.m. - Coordinate Interchange SARDT  
Wednesday, August 7, 2002 -- 8 a.m. to 4 p.m. - Operate Within Limits SARDT  
Thursday, August 8, 2002 -- 8 a.m. to 4 p.m. - Facility Ratings SARDT

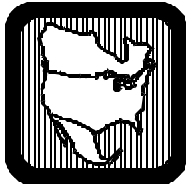
Sleeping rooms are being held for this event the night of August 5, 2002 at the special rate of \$159 single/double, \$169 triple and \$179 quad. The cut-off for sleeping rooms is Monday, August 29, 2002. Check-in time is 3 p.m., check-out is 11 a.m.

The DoubleTree is located 1 mile from O'Hare International Airport. A complimentary shuttle is available from the Shuttle Center door # 3 and runs every 20 minutes. Taxis cost about \$10.

When making your hotel reservations, please make sure to mention "North American Electric Reliability Council/NERC Meeting" so your reservation is credited to our room block. A penalty may be charged to NERC if the total rooms blocked for this event are not picked up. Please inform us immediately if you are unable to attend. Also, if you are using an agency for your travel plans, make sure they mention NERC.

Please let me know if you have any questions. Remember dress is business casual.

Barbara Bogenrief  
North American Electric Reliability Council (NERC)  
116-390 Village Boulevard  
Princeton, New Jersey 08540  
Phone: 609-452-8060  
Fax: 609-452-9550



## **NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL**

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Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

Monitor and Assess Short-term Transmission Reliability – Operate Within Limits  
SAR Drafting Team Meeting  
August 7, 2002 — 0800–1600  
Chicago, IL

**Agenda:**

- 0800 – Welcome and Administrative Items
- 0815 – Review of Duties and Tasks of SAR Drafting Team Members
- 0830 – Discuss Comments Submitted on SAR & Draft Responses
- 1200 – Lunch
- 1300 – Discuss Comments Submitted on SAR & Draft Responses
- 1500 – Revise SAR
- 1330 – Summarize Meeting Action Items & Identify Next Meeting Date
- 1400 – Adjourn

**Attachments:**

- Summary Comments on “Monitor and Assess Short-term Transmission Reliability – Operate Within Limits” SAR
- Industry Response to Question – Is there a reliability-related need for a “Monitor and Assess Short-term Transmission Reliability – Operate Within Limits” Standard?

**“Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability” SAR Drafting Team Meeting Attendance Sheet  
August 7, 2002**

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| <b>Name</b>        | <b>Phone Number</b> | <b>E-Mail Address</b>  |
|--------------------|---------------------|--|
| Jim Case, Chairman | 870 541-3908        | <a href="mailto:jcase@entergy.com">jcase@entergy.com</a>                           |
| Mark Fidrych       | 970 461-7240        | <a href="mailto:fidrych@wapa.gov">fidrych@wapa.gov</a>                             |
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| Drew Kovalak       | 651 632-8412        | <a href="mailto:Ddj.kovalak@mapp.org">Ddj.kovalak@mapp.org</a>                     |
| Wally Johnson      | 301 469-5252        | <a href="mailto:wajohnson@pepco.com">wajohnson@pepco.com</a>                       |
| Maureen Long       | 305 891-5497        | <a href="mailto:melong@compuserve.com">melong@compuserve.com</a>                   |
| Tom Vandervort     | 609 452-8060        | <a href="mailto:Tom.vandervort@nerc.com">Tom.vandervort@nerc.com</a>               |

## First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR - Summary of Comments and Considerations

### Summary of Comments

#### Background:

The “Operate Within Limits - Monitor and Assess Short-term Transmission Reliability ” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes

No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

Other comments:

Fifty-six interested industry participants responded to the above questions. Fifty two of those respondents indicated that there is a reliability-related need for an Organization Standard that addresses this topic.

There were many comments submitted on the scope of the SAR. These comments are addressed in this document. The comments can be viewed in their original format at:

[ftp://www.nerc.com/pub/sys/all\\_updl/standards/sar/BalResDemnd\\_Comments.pdf](ftp://www.nerc.com/pub/sys/all_updl/standards/sar/BalResDemnd_Comments.pdf)

In this document the comments have been cut and pasted and organized by central themes.

The SAR DTs consideration of each of the comments submitted follows that comment or suggestion. In cases where there were several comments submitted that made the same or a very similar suggestion, a single response has been provided. The comments submitted by industry participants served as the basis for revising this SAR.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give EVERY comment serious consideration in this process! If you feel there has been an error or omission, you can contact Tom Vandervort in the NERC office. Tom can be reached at 609-452-8060 or at tom.vandervort@nerc.com. Or you can contact the Standards Process Manager, Maureen Long at 305-891-5497 or at spm@nerc.com.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

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**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Suggestions to Change the Title of this SAR***

Original Title: Operate Within Limits – Monitor and Assess Short-term Transmission Reliability

Revised Title: Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability

**Comment:**

We agree this SAR should be a “core reliability” Organization Standard but suggest the title be revised to “Operate Within Thermal, Voltage and Stability Limits”. (Entergy)

**Consideration:**

This SAR addresses transmission system limits. ‘Which’ limits will be established by another SAR DT, and including a list of elements here would restrict the scope of that SAR.

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**Comment:**

Change title to " Monitor Transmission Reliability - Operate within Limits". (CA ISO)  
The word “Reliability” is missing from the title of the proposed standard.

**Consideration:**

The word “reliability” was accidentally omitted from the last version of this SAR. This has been corrected

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**Comment:**

Considering the idea of the NERC White Paper that the description for each proposed standard should identify WHAT performance must be achieved, rather than detailing HOW to achieve that performance, the title of this SAR could be simplified to focus on the “Operating Within Limits”. (The IMO)

**Consideration:**

The suggested revision would reduce the intended scope of this SAR.



**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Suggestions to Change the Purpose/Industry Need of this SAR***

**Original Purpose/Industry Need:**

To establish a standard that requires the bulk electric transmission system be operated within established limits.

**Revised 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.

**Comment:**

The industry should:

- Develop the criteria for this core reliability Organization Standard,
- Establish measures for measuring conformance to the criteria, and
- Monitor for conformance to the criteria. (Entergy)

**Consideration:**

The SAR DT is trying to do this. Your specific written comments will help ensure that we achieve this.

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**Comment:**

Additionally, the "Purpose/Industry Need" statement should be rewritten to be more specific as follows: "To establish a standard that requires the bulk electric transmission system be monitored and operated within established thermal, voltage and stability limits". (American Electric Power)

**Consideration:**

The SAR DT revised the purpose to clarify the industry need for this standard. The range of limits to be included will be established by another SAR DT.

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**Comment:**

Change to: prevent and correct limit violations. (BPA Power Business Line)

**Consideration:**

The industry need section of the SAR addresses the question – Why? The suggested change would answer the question – What? and is addressed in the title of the SAR.

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**Comment:**

The Industry Need has not been defined for this SAR. (Manitoba Hydro)

**Consideration:**

The Industry Need section of the SAR has been refined so that the reliability-related need for this proposed standard is more clear.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

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**Comment:**

The SAR should be re-written to say, "Establish a standard that requires adherence to operating limits. (CA ISO)

**Consideration:**

Both the Purpose/Industry Need section and the Brief Description of the SAR have been revised. The suggested language has been included in the revised Brief Description.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Suggestions to Change the Brief Description of this SAR***

**Original Brief Description:**

Establish a standard that requires adherence to operating limits.

Requirements shall include items such as real time monitoring of system parameters against operating limits, correcting limit violations, performing short-term (e.g., next-day) and real-time transmission reliability analyses, etc.

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

**Revised Brief Description:**

This standard requires adherence to established operating limits<sup>1</sup> 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
- Performing corrective actions to mitigate limit violations
- Keeping records and filing reports

**Comment:**

The Organization Standard should include the requirements that appropriate entities:

- Establish thermal, voltage and stability limits for all appropriate facilities and operating conditions,
- The system be operated to respect those limits,
- Measures be developed to assure conformance (Entergy)

**Consideration:**

Establishing limits is being addressed by the “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” SAR DT. This SAR addresses operating within these limits.

Measures will be developed by the Standard Drafting Team that develops the technical language for this proposed standard.

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**Comment:**

Requirements shall include items such as monitoring of system parameters against operating limits, and correcting limit violations". (CA ISO)

**Consideration:**

The SAR DT included these suggested changes in the revisions made to the SAR.

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<sup>1</sup> These are the limits established through the standard, “Determine Facility Ratings, Operating Limits and Transfer Capabilities”

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Comment:**

Eliminate the item in the Description which states "Do not allow an over-subscription of transfer capability" addresses a business practice and should be eliminated. (Powerex)

**Consideration:**

This referenced text was not included in the SAR and could not be located.

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**Comment:**

The use of the term "etc." in the SAR description leaves the scope of this SAR open-ended. The scope of the SAR should be stated and complete. (Dairyland) (MAPP Reliability Council)

**Consideration:**

The SAR has been revised to eliminate the "etc.". The details of what will be in the requirements haven't been established.

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**Comment:**

The purpose/industry need section should start with: The purpose of this standard is to ensure that a consistent, uniformly applied standard is developed for ... (Dynergy)

**Consideration:**

The SAR DT endorsed this concept, but rephrased this to incorporate other suggested changes.

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**Comment:**

The scope is too broad as stated in the description section of the SAR. More detail is required. Specifying "real time monitoring" and "next-day analysis" crosses into the "how to do it" arena. The standard should simply state the desired results. (Nova Scotia Power)

**Consideration:**

The scope of this SAR is intended to define the boundaries of the proposed standard. Requiring real time monitoring is a "What," not a "How." The industry's comments have indicated that this SAR should focus on identifying "What" performance must be achieved without specifying "How" to achieve that performance.

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**Comment:**

The title and brief description of the proposed standard refer to "Transmission Reliability". This may be misleading and may imply that the new standard would apply to the transmission function only. The standard should address the reliability of the bulk electric system. (The IMO)

**Consideration:**

This SAR will address transmission only – it will not address distribution or generation. Your comment helped us clarify the description to ensure that it is clear to all.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Detailed Description***

New 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 and expected state of the transmission system (and critical elements)
  - Monitor parameters that indicate the current and expected state of tie lines to other systems and of the overall interconnected transmission system
- Performing short-term and real-time transmission reliability analyses
  - Collect data needed for performing real time reliability analyses
  - Conduct an operating assessment to identify limiting facilities
- Performing corrective actions to mitigate limit violations
  - Have a mitigation plan
  - Implement mitigation plan where necessary
- Keeping records and filing reports
  - Log violations and maintain records for some period of time
  - Report information to NERC based on specified criteria (magnitude, duration, type of violation)

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Original List of Applicable Functions:***

|   |                               |   |
|---|-------------------------------|---|
| 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            | Owens transmission facilities   |
| X | Transmission Operator (TOP)   | 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                     | Owens 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   |

Revised List of Applicable Functions:

|   |                               |   |
|---|-------------------------------|---|
| 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            | Owens transmission facilities   |
| X | Transmission Operator (TOP)   | 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                     | Owens 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   |

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR - Summary of Comments and Considerations**

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**Comment:**

Interchange Authority should be checked because of the definition of "Interchange Schedule" in NERC Operating Policy 3, since schedule implies the actual implemented energy flow. (Calpine) (Southern Company) (Progress Energy) (SERC OPWG)

**Comment:**

Applicability should not be limited to the Reliability Authority, Balancing Authority and Transmission Operator, but should include all operational entities (if you are operating, you have to stay within your defined limits).(Calpine) (Progress Energy) (SERC Compliance Sub)

**Comment:**

The "Assess Transmission future needs and develop transmission plans" SAR does not state a requirement to plan the system so that it can be operated within Operating Limits, therefore, we feel that the Planning Authority should be checked as applicable for this SAR. (Southern Company) (SERC OPWG)

**Comment:**

Add Generator and LSE to the list of Functions to which this standard would apply. (Load dropping can be used as a tool to prevent and correct violations. Generation is critical in the areas of Reactive, Voltage, Frequency, and Reserves. Generators are used extensively in preventing and correcting limit violations.) (BPA Power Business Line)

**Comment:**

Therefore, the "generation operator" reliability function should also apply since they will need to take direction from the Transmission Operator and/or Reliability Authority. (American Transmission Co)

**Comment:**

Planning Authority should be included. (Southeastern Power Adm)

**Consideration:**

The functions checked are the functions that would have performance requirements and associated compliance elements in the proposed standard. At this point, the only functions that would have performance measures as part of this proposed standard are the Reliability Authority and the Transmission Operator.

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**Comment:**

Eliminate the responsibility of the Balancing Authority, which has no bearing on this standard/objective. (FirstEnergy)

**Comment:**

Eliminate Balancing Authority: In reviewing a Balancing Authorities responsibilities, it does not appear to Illinois Power that the BA has any responsibility to Monitor and Assess Short-term Transmission Reliability, and therefore would not be subject to this Standard. (Illinois Power)

**Consideration:**

The Balancing Authority has been dropped from the applicable functions because their role in maintaining frequency is covered within the SAR on Balance Resources and Demand.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

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**Comment:**

The SAR indicates that this standard would apply to Generators and Distribution Providers. Today NERC Policy and Standards do not apply to these Functions. For example, NERC has no authority to require its standards to be applied to determine connection requirements for distribution facilities. And the application of NERC standards to Independent Generators are carried out by transmission owners through interconnection agreements. Is NERC proposing that this will change and they will begin to impose standards directly on distribution providers and generators?

**Consideration:**

This SAR does not include requirements for Generators or Distribution.



**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Comments Submitted Related to Terminology:**

**Comment:**

Various terms for bulk electric system have been used, e.g. “bulk electric transmission system” (Purpose/Industry Need), “bulk transmission system” (Reliability Function) and the “interconnected bulk electric systems” or “bulk electric systems” (Reliability and Market Interface Principles). The terminology should be standardized and consistent. (The IMO)

**Consideration:**

Some of these terms (those contained within the Reliability Functions and the Reliability and Market Interface Principles) are within the SAR Template and changing these templates is outside of the scope of this SAR DT. This SAR doesn't include distribution or generation; the SAR has been revised to clarify this.

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**Comment:**

The primary comment here is that there is a need to agree on terms and definitions. A clear distinction must be made between the violation of a limit that has no impact on the operation of the interconnected system, and the violation of a limit that threatens the security of the interconnected system. (MAAC)

**Consideration:**

This concept should be clarified with the revisions to this SAR. This SAR only addresses security limits, that, if exceeded, have significant consequences. (Not necessarily the loss of a single device which may be a local problem. This SAR does cover items such as cascading outages.)

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**Comment:**

The term "operating limits" is used in this SAR as in the "Determine Facility Ratings" SAR. Please see our comments concerning OSL/OSLV for that SAR and ensure that terms are consistent and defined appropriately. (Calpine) (Southern Company) (Progress Energy) (SERC OPWG)

*(This is the comment submitted on the referenced SAR.)* Common terminology should be used throughout the SARs. If the term "operating limits" is used, a definition is needed. The use of "operating limits" is confusing when past standards have used other terminology such as Operating Security Limits and Operating Security Limit Violations. This standard should address the definition of the terminology used, whether "operating limits" or "Operating Security Limits."

**Consideration:**

The term used in the “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” will be used in this SAR.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Comments about the Level of Detail Within the SAR***

**Comment:**

Add sufficient detail to provide a clear understanding of the specific functions covered by this SAR. (Calpine) (Progress Energy) (SERC Compliance Subcommittee)

**Comment:**

The scope is too general. Would this standard cover operation beyond first-contingency? (Ameren Services)

**Comment:**

There is inadequate detail in the SAR to determine if the scope of the SAR is appropriate and adequate. The scope should not include and requirements on HOW to deal with the prevention or correction of limit violations. (Illinois Power Company)

**Consideration:**

Additional details have been added to the SAR.

***Comments indicating the Focus of the SAR should be on “What” not “How”***

**Comment:**

The Organization Standard should not establish “how” one develops these limits, “how” one operates to meet the limits, “how” one monitors for criteria violations, or “how” one corrects limit violations, or the details of “how” to measure, data warehouse, or “how” to protect against operation outside of the limits. (Entergy)

**Comment:**

Should concentrate on performance instead of procedures such as performing day ahead analysis. An entity could perform day ahead analysis but if no action is taken as a result of the analysis then what good is it? (Cinergy)

**Comment:**

(Eliminate) The procedures on how to alleviate overloads (i.e., TLRs) and other limit violation. (Exelon)

**Comment:**

(Eliminate) procedures on how to curtail transactions and generation schedules to achieve the reliability objectives stated. (Reliant Resources)

**Comment:**

Eliminate all references to HOW this standard would be met such as real time monitoring, data, communications, particular analysis, and timing. These tend to be issues as to HOW to achieve the standard not what the standard should be. (Illinois Power)

**Comment:**

Process and procedures for performing analysis should be part of the certification process and not a standard that has measurement requirements. (Cinergy)

## **First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR - Summary of Comments and Considerations**

### **Consideration:**

The SAR has been revised to indicate that the requirements would address “What” performance must be met without identifying “How” to achieve that performance.

### ***Suggestions to Broaden the Scope of this SAR***

#### **Comment:**

Add redispatch issues. Redispatch is one of the tools the transmission operator will use to make sure the system is operated within the limits. (American Transmission Company)

#### **Consideration:**

Redispatch is a tool that can be used to operate within limits. Specifying the use of a tool would be including details that identified “How” to achieve the required performance. The industry has indicated that this SAR should be written to indicate “What” level of performance must be achieved without indicating “How” to achieve that performance.

### ***Comments Suggesting Additions to Other SARs***

#### **Comment:**

Please note that there should be a companion SAR to this that requires LSEs, distribution providers, and generators to respond to requests that will have the effect of operating the system within Operating Limits. (Calpine) (Southern Company) (Progress Energy) (SERC OPWG)

#### **Consideration:**

This is outside the scope of this SAR DT. You are encouraged to submit a SAR to address this topic if you feel that it should be developed. However, the NERC Organization Certification Task Force (OCTF) is working on a SAR for the certification requirements for the RA – the authority of the RA to direct emergency actions should be contained within the RA’s certification requirements SAR. This could also be addressed within Interconnection Agreements.

### ***Other General Comments on this SAR***

#### **Comment:**

This SAR and the other posted SARs provide an appropriate framework for transitioning existing NERC Operating Policies and Planning Standards into new, NERC Organization Standards. Multiple compliance measures may be defined and developed for each of the eleven proposed Organization Standards. The Organization Standards and related compliance measures should focus on what functions must be performed for reliability, on who is responsible for each compliance measure for each required function and not, on how the compliance measure is achieved. The compliance measure must be measurable or demonstrable to ensure compliance. Adherence to transmission system operating limits is a core reliability requirement and should be addressed by a Standard. Requirements for monitoring real time loading against operating limits and compliance measures for determining those limits are certainly appropriate. Compliance measures for correcting limit violations must make allowance for the various mechanisms in place and being developed to provide market solutions to remedy transmission congestion. These mechanisms are very different from the old “command and control” procedures that are the basis of existing NERC policies. All standards must be crafted to allow market solutions to work while still maintaining system reliability. (ERCOT)

## First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR - Summary of Comments and Considerations

### **Consideration:**

Compliance measures will be identified by the Standards Drafting Team once the SAR's scope is agreed to. However, Compliance Measures are standards of performance and need to be achieved through whatever systems or processes are available within the appropriate timeframe including market solutions. Identifying specific systems or processes would be identifying "How" to achieve a performance goal rather than identifying "What" performance goal to achieve. The industry has stated a preference for new reliability standards that provide the "What" but not the "How."

### **Comment:**

One of the major problems confronting the industry today is in the identification of real-time system limits and operating conditions. Viable communications protocol need to be developed and implemented that will correctly monitor and assess the electric system in a real-time mode. Establishment of a dynamic and valid real-time data system that will accurately depict system conditions will further enable our industry to maximize its potential. We must be able to define short term system requirements and operational limits in such a manner as to promote the efficient and reliable use of the transmission grid. Partial path reservations and also real-time modifications of transmission scheduling need to be addressed in a more accurate manner. The accuracy and timely assessment of current operating limits need to be reviewed, studied, and validated in a sequence that will not inhibit the real-time operations of the system. The development of established limits, and the assessment and comparison of those limits in a real-time environment, will insure that transmission operations will be able to react to the current use that is imposed on the system in a reliable and safe manner. (FirstEnergy)

### **Consideration:**

The SAR DT is trying to develop a SAR that identifies the scope for this standard.

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### **Comment:**

Would it be appropriate to include comments about operating guides in this standard instead of my comments in the proposed standard to "Determine Facility Ratings, Operating Limits, and Transfer Capabilities?" The transmission operator and Reliability Authority should have some discretion in operating within established limits. I.E. if a line is at it's OSL but the OSL limit was based on summer ratings and it is cool outside, the transmission operator shouldn't be forced into some remedial action. (American Transmission Company)

### **Consideration:**

Operating Guides are used in setting limits. Establishing operating limits is being addressed in the SAR called, "Determine Facility Ratings, Operating Limits, and Transfer Capabilities," and is outside the scope of this SAR DT.

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### **Comment:**

Will the standards used here to determine if the system is operated within limits be the same standards that will be used to plan the system? (BPA)

### **Consideration:**

Linking the standards used to determine if the system is operated within limits to the standards used to plan the system is outside the scope of the SAR DT's work. The SAR DT is assigned the job of refining this SAR so it meets the industry's needs. If there are specific measures that you feel should be included in this SAR you need to identify those in your comments.

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**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Comment:**

HL&P is uncertain whether a meaningful standard can be developed in this area. There are likely to be different requirements for different types of transmission systems. For a larger, more complicated system, more extensive short-term assessments are likely to be more justified than for smaller systems. (HL&P)

**Consideration:**

This SAR will establish standards for the bulk transmission system. These rules are designed to prevent one entity from damaging another. Regional differences that would require more or less stringent requirements than the standard should be highlighted now so they can be included in the SAR.

**Comments Related to FERC and NAESB**

**Comment:**

Today short-term transmission reliability issues are addressed by congestion management either thru TLR curtailments, LMP or other methods. FERC's proposed SMD requires congestion management in all markets using LMP. Congestion management is a market issue. Therefore, this standard should be developed in a process which takes into account market and reliability interests. (Allegheny Energy Supply)

**Comment:**

The establishment of this SAR is premature. All commercial implications of the SAR should be identified and mitigated prior to the drafting. (Elcon)

**Comment:**

The existing NERC standard Policy 9, includes a procedure known as "TLR" that must be compliant with FERC tariff obligations to curtail transactions. A core reliability standard should only define the limits and conditions required to achieve a reliable and secure transmission system and allow for market-driven procedures to provide tools for the operators to employ to achieve the core reliability requirements. Further, FERC's upcoming Standard Market Design NOPR will entail new congestion management rules for TPs to adhere to. Procedures for transaction curtailment should be developed with the NAESB process and filed at FERC for approval. (Reliant Resources)

**Comment:**

To the extent that this SAR is transitioning an existing standard from the old world to the new world (Functional Model), then the standard should not go beyond the original scope. Consistent with our general comments, once the clarity is achieved on Standard Market Design and RTO formations, then this standard should be revisited and reevaluated. (AEP)

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Comment:**

The promulgation for comment of these SARs is premature. The industry "standard making process" is in a transition phase and it is overly burdensome to devote resources at this time. Once legislation or FERC firmly determines which entity(ies) is responsible for standards it will make sense to move forward with said entity.

Even if NERC wants to cover reliability standards, almost all standards have a reliability and commercial impact; thereby, necessitating developing a single process that incorporates both commercial and reliability aspects of standards development. The current NERC process risks being changed soon, discounts commercial aspects, and is not part of a finalized overall industry process.

Waiting a short while to move forward on a new standards setting process is acceptable and prudent given that NERC standards are currently in place and the industry can continue to use these standards until the new process and standards setting organization(s) are firmly set.  
(Baltimore Gas & Electric)

**Comment:**

It is premature to continue development of this SAR until FERC has specified the organization to be responsible for the development of wholesale electric standards. (Public Service Electric & Gas)

**Consideration:**

The NERC Board of Trustees directed us to move forward in developing core reliability standards. The SAR contains only reliability-related elements. There are no references to TLR or other market mechanisms in this SAR.

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

**Standard Authorization Request (SAR) Form**

|                             |   |
|-----------------------------|---|
| Title of Proposed Standard: | Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability |
| Request Date:               | March 7, 2002   |
| Authorized for Posting:     | March 20, 2002  |
| SAR ID# :                   | OPER_WITHN_LMTS_01_02   |

| SAR Requestor Information                     | SAR Type (Put an 'x' in front of one of these selections) |                                 |
|---|---|---------------------------------|
| Name: Jim Byrd<br>(Al DiCaprio as substitute) | X   | New Standard                    |
| Primary Contact: Al DiCaprio                  |   | Revision to existing Standard   |
| Telephone: 610 666-8854<br>Fax: 610 666-4282  |   | Withdrawal of existing Standard |
| 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 (Provide one or two sentences.)**

This standard requires adherence to established operating limits<sup>1</sup> 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
- Performing corrective actions to mitigate limit violations
- Keeping records and filing reports

<sup>1</sup> These are the limits established through the standard, "Determine Facility Ratings, Operating Limits and Transfer Capabilities"

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

**Reliability Functions**

| <b>The Standard will Apply to the Following Functions (Put an 'X' in front of each one that applies)</b> |                               |  |
|--|-------------------------------|--|
| 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  |



**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

**Reliability and Market Interface Principles**

| <b>Applicable Reliability Principles (Put an 'x' in front of all that apply)</b>  |   |
|---|---|
| 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  |
| <p><b>Does the proposed Standard comply with all of the following Market Interface Principles?</b></p> <p style="text-align: right;">Yes</p> <p><i>(Enter 'yes' or 'no')</i></p>  |   |
| 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 |   |

## **SAR: *Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability***

### **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 and expected state of the transmission system
  - Monitor parameters that indicate the current and expected state of tie lines to other systems and of the overall interconnected transmission system
- Performing short-term and real-time transmission reliability analyses
  - Collect data needed for performing real time reliability analyses
  - Conduct an operating assessment to identify limiting facilities
- Performing corrective actions to mitigate limit violations
  - Have a mitigation plan
  - Implement mitigation plan where necessary
- Keeping records and filing reports
  - Log violations and maintain records for some period of time
  - Report information to NERC based on specified criteria (magnitude, duration, type of violation)

### **Related SARs**

| <b>SAR ID</b>          | <b>Explanation</b>   |
|------------------------|--|
| 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_OPERATIONS_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.  |

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

***Regional Differences***

| <b>Region</b> | <b>Explanation</b> |
|---------------|--------------------|
| 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    |
| WSCC          | None identified    |

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

**Implementation Plan**

**Description** (Provide plans for the implementation of the proposed standard, including any known systems or training requirements.)

**The following sections of Operating Policies should be retired when this standard is implemented:**

Policy 2 – Transmission

- Standard A.1.
- Standard A.1.1.
- Standard A.1.2
- Standard A.2.
- Standard A.2.1.
- Standard A.2.2.
- Requirement A.1.
- Requirement A.1.1.
- Requirement A.1.2.
- Requirement B.1.
- Requirement B.5.

Policy 9 – Security Coordinator Procedures

- Introduction – Introductory paragraph and second and third bullets
- Requirement A.1.
- Requirement A.1.2.
- Requirement C. 3.1.
- Requirement C.3.2.
- Requirement C.3.2.1.
- Requirement C.3.2.1.1.

Policy 4 – System Coordination

- Section A (*Section A needs careful scrutiny by numerous SAR Drafting Teams*)

Policy 5 – Emergency Operations

- Section C
- Section D

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

| <b>SAR Drafting Team</b>        |   |
|---------------------------------|---|
| <b>Chairman</b>                 | James Case  |
| <b>Secretary</b>                | Tom Vandervort  |
| <b>Requestor</b>                | Jim Byrd/Al DiCaprio  |
| <b>Industry Representatives</b> | 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 |