

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Note – This form is to comment on version 2 of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The latest version of this SAR (FACILITY_RATINGS_01_02) is posted on the Standards web site at: <http://www.nerc.com/~filez/sar-approved.html>

E-mail this form between September 24 –October 25, 2002, to: sarcomm@nerc.com with “SAR Comments” in the subject line.

Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments This isn't rocket science or something patentable. At the very least it should be provided to the entity responsible for Standards Compliance.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments Ratings determine ATC. If the methodology is not disclosed, there is the possibility (or at least the perception) of manipulation of ATC. This is exacerbated by the potential proliferation of Locational Marginal Pricing (and congestion charges) as mandated in the FERC SMD NOPR. The potential of "Gaming" in all its forms should be avoided if at all possible.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

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SAR Commenter Information

Name George Bartlett

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Comments

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Comments Entergy is concerned about the amount of "public" information and national and regional security. Therefore, we suggest that facility ratings be "made available to entities certified by NERC..", instead of making the ratings "public".

We also suggest that an entity's methodology for the determination of ratings should not be made "public" or "made available to" anyone else.

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SAR Commenter Information

Name Lee A. Gladish

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Yes

No

Comments Combined with comments in next box.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Organizations should be held accountable for their methodologies in determining facility ratings to prevent gaming of the system and the subsequent potential of bogus ratings. I would not necessarily advocate publishing these methodologies, but rather suggest that they be available and provided upon request from a bona-fide interested party.

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3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

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Yes

No

Comments

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7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

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8. Should avoidance of equipment damage be added to the Purpose of this SAR?

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SAR Commenter Information

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Fax

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Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Could be NO if sufficient accountability is available and a severe penalty with, collection teeth, is possible.

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3. Should this standard include requirements related to ATC determination?

Yes

No

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Yes

No

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Transmission reliability assessment is inexact and should be included with all assumptions noted.

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Yes

No

Comments

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9. Comments How can real time control needs be met without a criteria that accounts for the changing power capacities? If MVar loading is high, MW capacity suffers. If a run-of-the-river Hydroplant opens up, how long until the forebay drops, the tailwater rises and therefore MW production suffers? Steam plants have a similar problem. If a group of plants respond to a low frequency how quickly will the line be overloaded? If part of the system doesn't respond at the same rate as others, capacity issues will move quickly to the transmission system and generation capacities may not matter.

10.

The bottom line is that real time conditions must be taken into account. This is especially true for the one component that is the most limiting, at the moment. Capacities without some accounting for real dynamic limiting conditions can be highly misleading.

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SAR Commenter Information

Name Art Giardino

Organization Public Service Electric & Gas

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Fax (973) 242-6074

E-mail arthur.giardino@pseg.com

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Should be available to justify validity of results, and should include a change reporting protocol.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Available to NERC, Regional Council or RTO on request

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

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Yes

No

Comments

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Comments FERC already requires facility ratings be calculated twice a year, and requires a change reporting process for rating changes. Ensure this Standard is consistent with the FERC requirements and does not add the unnecessary burden of additional rating reviews or re-calculations.

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SAR Commenter Information

Name Karl Kohlrus

Organization City Water, Light & Power

Telephone 217-321-1391

Fax 217-789-2082

E-mail kkohlrus@cwlp.com

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SAR Commenter Information

Name Kenneth Githens

Organization Allegheny Energy Supply

Telephone 412-858-1635

Fax 412-856-2912

E-mail kgithen@alleghenyenergy.com

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SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Arbitrary application of facility ratings could be used to restrict the markets. Requiring the methodology to be document, would help to insure the ratings are applied on a consistant basis.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments But if documented, any disputes could be easily settled.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments Facility ratings should be set to prevent equipment damage.

Please use the space below to submit any other comments you may have on this SAR:

Comments

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Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name Ray Morella

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Background Information:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments There needs to be some measure that a methodology exists and is being consistently applied. This methodology should be consistently determined and applied by the transmission owner. This methodology should also document risk assesment in determining these ratings that are within a transmission owners guidelines.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Consistent with the availability of other information utilized in performance of system studies.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

The following comments are provided as clarification of our 'NO' response to the above questions 3 and 4. We believe that requirements for transfer capability that include ATC, TRM and CBM should not be included in a SAR that is being developed to address equipment and facility ratings. The importance of defining requirements associated with the determination of transfer capability, including ATC, TRM, and CBM, would be better accomodated in a specific SAR. BUT, if transfer capability requirements are going to be addresses within this SAR it must include issues associated with the determination of the indicative ATC which is reliably

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available, therefore those aspects of ATC determination should be addressed, including TRM and CBM.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments As long as the limit determining methodology is documented and followed under the oversight of a Market Monitor.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

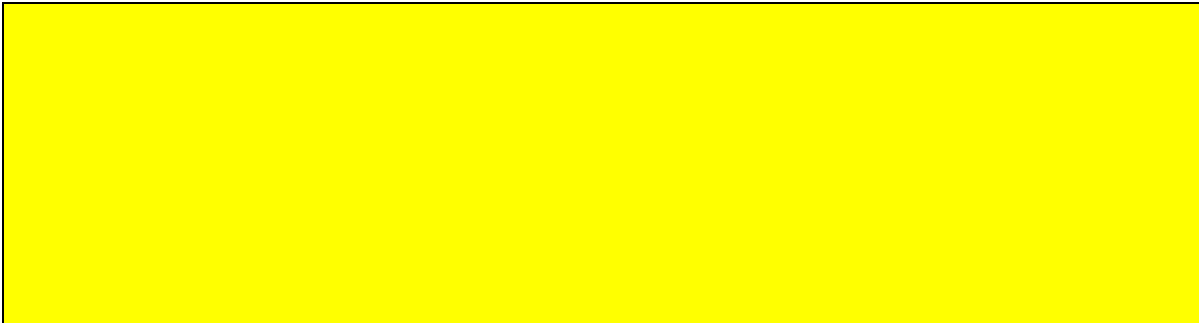
8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments As an example, accelerated transformer loss of life may be interpreted as equipment damage, and is not a reliability risk if effectively managed.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR



Please use the space below to submit any other comments you may have on this SAR:

9. Comments There are two major points that we would like to address in our comments 1) The ultimate purpose of this SAR and 2) addressing ATC, TRM, and CBM.
- 10.
11. This proposed SAR seems to be trying to address multiple, and somewhat independent subjects in one SAR. System Operating Limits and Transfer Capability should each be addressed in individual and specific SARs.
- 12.
13. The main topic of this SAR was the documentation of an individual Transmission Owners methodology for determining equipment and facility ratings. This will allow assurance that ratings are consistently determined and applied by a Transmission Owner, and documenting the effective risk taken in the determination of normal and emergency ratings.
- 14.
15. The discussion on System Operating Limits addresses the application of the determined ratings in operations and planning assessments. This subject is more appropriately addressed in a separate SAR focused on assurance of reliable system operations and planning assessments. The SOL SAR should address the appropriate application of various normal and emergency ratings (one hour, four hour, long term) in determining operating limits, and should also consider the appropriate application of defined operating procedures.
- 16.
17. The discussion on Transfer Capability also addresses the application of the determined ratings in transfer capability analysis. A discussion on Transfer Capability also needs to include discussion of ATC and the related margins (CBM and TRM). This subject is also more appropriately addressed in a separate SAR. The TC SAR should address the appropriate application of various normal and emergency ratings (one hour, four hour, long term) in determining operating limits, and should also consider the appropriate application of defined operating procedures. In addition, the TC SAR should consider the coordination of the use of the various normal and emergency ratings, and defined operating procedures, with the implementation of various TLR levels.
- 18.
19. There needs to be a clarification to the reference to 'maintenance condition' under the Equipment Rating description. Equipment ratings should consider the current condition of the equipment. For example, a transformer which is currently generating increased levels of gassing (indicative of an internal problem) may have a lower rating (normal and emergency) than a similar transformer not experiencing excessive gassing. However, equipment ratings should not be excessively conservative as an alternative to Good Utility Practice in the

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maintenance of equipment. Equipment Ratings should reflect whatever the equipment's current capability is.

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If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name A. Ralph Rufrano

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Background Information:

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- The scope of the SAR is fine as it is
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- The scope of the SAR should be reduced to eliminate:

- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Documentation of methodology used to determine facility ratings should be required in order to assess that Industry best practices are used, as well as to assure that cost cutting initiatives do not water down reliability.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Rating methodologies should be made available to the reliability authorities and regulatory entities to ensure that they meet with Good Industry Practice.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

The need for standardization of ATC should be addressed elsewhere.

TRM should be addressed so that consistency in analysis can be achieved.

CBM - appears to be a market issue which should not be linked to reliability .

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at:

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ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments Although different at times the calculation of facility ratings have been developed over time and experience to be workable in certain parts of the country and should not be dismissed off hand for a generic method. Also the setting of operating limits and transfer capability are often driven by local reliability rules which are more stringent and were imposed for specific reasons which should not be forgotten.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments I believe that this is incorporated in the development of any facility rating methodology.

Please use the space below to submit any other comments you may have on this SAR:

Comments

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SAR Commenter Information

Name Alan Johnson

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Background Information:

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- 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:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Making rating methodologies public brings transparency to the planning process. System planners and market participants will be able to better understand and apply facility ratings provided. The provision of methodologies will also enable analysis of rating discrepancies among transmission providers using the same or similar equipment. This will result in a more efficient and reliable transmission system.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments Don't think it needs to be added to the purpose (it's inherent). However, would not be opposed to adding it if other entities feel strongly that such language is needed.

Please use the space below to submit any other comments you may have on this SAR:

Comments

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SAR Commenter Information

Name Andrew Wilcox

Organization NB Power

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Background Information:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a re commendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

9. Comments

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SAR Commenter Information

Name Bob Pierce

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Background Information:

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- The scope of the SAR should be reduced to eliminate:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments The standard need not be made publicly available but should be provided to an independent entity that the transmission owner is a part of - RTO, ITP or reliability council to allow for a evaluation of conformance to good engineering practice.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments With respect to facility rating methods, there are a variety of reasons to allow for regional differences, but all that is necessary in the SAR is a generic statement addressing the issue. The statement should explain that the existing transmission systems were designed and operated to differing, pre-existing standards according to the safety & reliability needs of their systems. New, universal standards should not be used to force transmission owners to make changes in their methods that may be unwarranted or unneeded. The SAR should provide guidance regarding the appropriate methods that should be employed in development of facility ratings

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments The "No" response assumes that determination of operating limits and transfer capability is not covered in the scope of this SAR. A comprehensive SAR on transfer capability would be more detailed, including issues such as TRM & CBM and possibly have market/commercial aspects.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

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Please use the space below to submit any other comments you may have on this SAR:

Comments The issue of transfer capability determination is significant enough to deserve its own standard. The SAR mentions some of the issues related to ATC calculations, but does not provide any explicit guidance on what the ATC related content should be. This SAR does not adequately address the details necessary to properly assess transfer capability.

Facility ratings determination and documentation is primarily a basic modeling issue and should have its own SAR. Operating limits and transfer capability are primarily system operating issues with potential market/commercial aspects - these subjects should not be linked together in the same SAR with facility ratings.

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If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

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- 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:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments A methodology should be a part of the standard.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

ATC values are only a portion of a transmission facility's transfer and loading capability. ATC values have high commercial and market impacts and are not reliability values.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments The Organizational Standards should be a requirement applicable across all systems regardless of system configuration or market structure. However, a facility standards rating calculation methodology may have specific guides or requirements for particular system equipment that may vary regionally, such as hydro-generation, phase-shift transformers, shunt compensators and others.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments It is difficult to determine whether a standard can be developed based upon the wording in the SAR that will not have an adverse impact on the market. NERC should instead ensure that commercial impacts can be properly vetted by developing a Memorandum of Understanding with NAESB to address commercial impacts that may arise after approval of the SAR.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments Current references in definitions for Facility Rating, "would not violate an applicable rating of any equipment" already encompasses this criteria. It is difficult to understand what the issue is surrounding this question without the benefit of first hand discussion. There should be a clarification to industry.

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Comments It is unclear what the standard will be comprised of as far as a measurable and enforceable quantity. There is no requirement to document the methodology an owner uses to calculate facility ratings, therefore leaving it up to the honor system to police establishment of the standards. This standard should either have prescribed limits that can be developed and applied to all systems, or require written public documentation for audits to verify behavior.

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SAR Commenter Information

Name Chifong Thomas

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Background Information:

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- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. **If you answered, “Yes” to question 4 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.**

TRM should be assessed during the determination of SOL and TC since the values determined for SOL and TC are by definition supposed to account for uncertainty in system operating conditions and system models (which is what TRM is for). A value for TRM does not have to be explicitly determined. Therefore, when calculating ATC, only CBM would be used to the extent that TRM is already incorporated in the determination of the TC.

*Further information regarding CBM and TRM, can be obtained by reading “Transmission Capability Margins and Their Use in ATC Determination” available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments More specific information on the requirements in this SAR is needed before Regional differences can be identified.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments If avoidance of "equipment damage" is to be included in the pupose at all, it should be modified to specify "undue equipment damage" since theoretically "equipment damage" occurs every time we energize a piece of equipment.

Please use the space below to submit any other comments you may have on this SAR:

Comments

Page SAR-4, last sentence of the third paragraph, please change the sentence to read:

"Appropriate equipment ratings, system operating limits and transfer capabilities form the basis for the proper planning and reliable operation of the system."

The way the sentence was originally worded implies that proper planning ensures reliable operation which is only true if the system is operated to the same standard. This can become a bigger issue if the system is planned to a lesser criteria than it has to operate to.

Page SAR-5, under the section on System Operating Limits, the first sentence needs to be

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modified to add "with concurrence from the transmission owners". So the sentence would read:

"System operating limits must be established by reliability authorities and planning authorities with concurrence from the transmission owners to define the maximum reliable loadings for facilities within the bulk power system."

Page SAR-5, last paragraph, the first two bullets: What is the difference between cascading outages and uncontrolled separation within the system? Uncontrolled separation within the system is normally the result of cascading outages.

Page SAR-6, first paragraph, the use of the word "static" may cause some confusion. It could be interpreted to mean "unchanged," or, to mean "steady state". Replacing the word "static" with the word "independent" may help.

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SAR Commenter Information

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Background Information:

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Due to the fact that facility ratings are being viewed as a core reliability requirement documentation of the methodology used to determine facility ratings should be documented and evaluated by an independent entity that can analyze the data. At a minimum documentation ensures that the data is reviewable for compliance purposes.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments ,However, the capability for a private review by an authorized entity should be established for compliance purposes.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments If the rating methodology is determined by the facility owner, regional factors will be addressed in their methodology.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments If SAR process includes consideration of ATC and CBM issues, then any revision of the SAR would have an impact on the market and should be addressed by NAESB. DENA did not anticipate that ATC and CBM would be part of this SAR.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

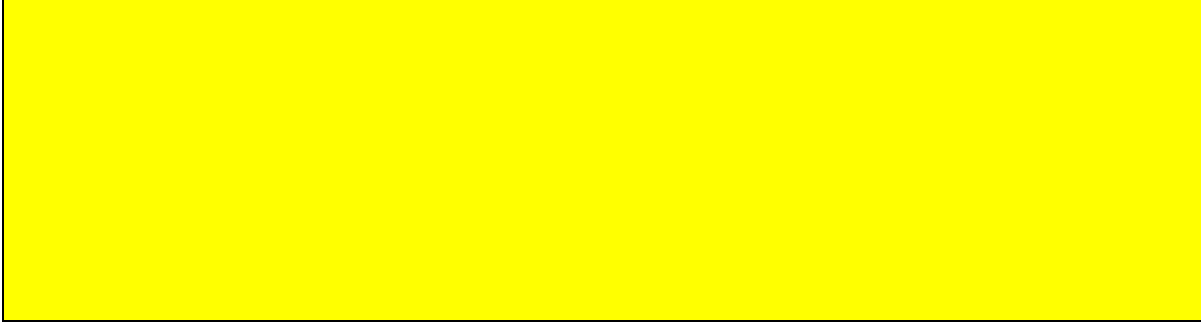
No

Comments

Please use the space below to submit any other comments you may have on this SAR:

Comments (1). Under the System Operating Limits and Transfer Capabilities Brief Description use the following language " shall be established for requiring the determination of system operating limits and transfer capabilities that apply facility ratings data...", in order to consistently apply a "What" vs. a "How" Standard. (2). Define term "Facility Rating" - the measurement of voltage, current," etc. instead of "the maximum voltage. (3) Eliminate - (Stability and voltage limits will be reflected as a permissible loading level) in the definition of System Operating Limit. (4) Eliminate the consistency reference in applying facility ratings to reliability studies and system operations due to vagueness. (5) Eliminate the term "RESPECT" in such phrases as "Facility Ratings shall respect the equipment ratings" due to vagueness. (6) The definition of Transfer Capability is also vague.

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SAR Commenter Information

Name Dave Little

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Background Information:

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- The scope of the SAR should be expanded to include:
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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Methodology should be available on request

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

Comments Question 3 re:ATC is an issue that should be included in the Operate Within Limits SAR

General question related to the use of the term "reliability margins" in line 2 of the detailed Description: How are definitions to be handled in the new Reliability Standards, will a general Glossary be developed?

The SAR should include references to the sections of the Operating Manual which will be replaced.

In the Detailed Description section:The Transmission Owner should be added to the RA and PA listed as responsible for establishing System Operating Limits, similar to the RA, PA and TO list responsible for the Transfer Capability

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SAR Commenter Information

Name Deborah Linke

Organization U.S. Bureau of Reclamation

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Background Information:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments We believe that the owner has the best knowledge about their facility. In addition, the public disclosure of ratings and rating methodology may have security ramifications.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

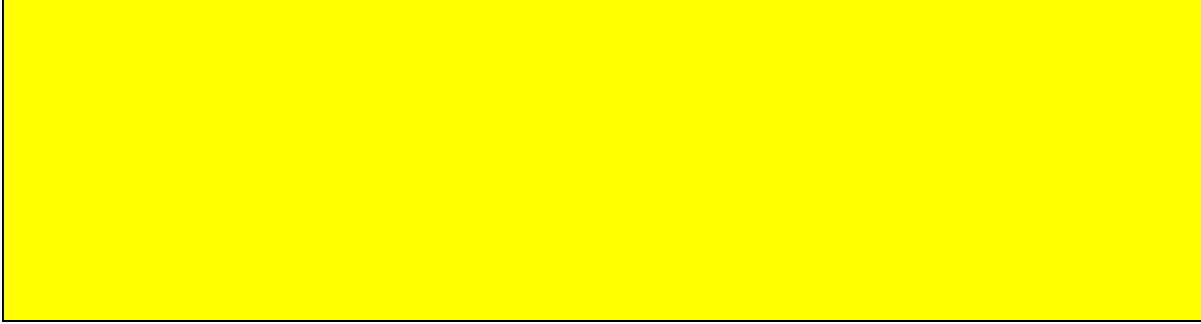
No

Comments

Please use the space below to submit any other comments you may have on this SAR:

9. Comments General Comments- It appears that the industry comments in the first round greatly favored separating facility ratings and system operating limites/transfer capabilities. Streamlining the process by reducing the number of standards is a worthwhile goal if it makes the process easier to understand and apply. However this is not the case here. Combining Facility Ratings with System Operating Limits and Transfer Capabilities does not make the standard easier to understand or easier to apply. A standard should apply to an entity or not apply to an entity. However, as this standard is currently written, generation owners who may otherwise have no involvement with System Operating Limits and Transfer Capabilities will be forced to interpret and comply with part of a standard. Facility Ratings stands clearly on its own. Breaking it out as a separate standard provides better clarity than the current draft.
10. Comment on Applicable Reliability Principles- We question if Principle 4 "Plans for emergency operation and system restoration..." should also apply. Facility ratings and individual component capabilities are important when restoring the power system. For example, when energizing a transmission line the generation's reactive capability rating is a fundamental item.

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SAR Commenter Information

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Background Information:

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SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments - Documentation will be needed by regulatory entities to ensure that reratings do not materially impact the reliability of service to customers. One example regulators would be looking for is if a rerating were performed to avoid maintainance or upgrade costs that in turn result in lower levels of reliability to customers.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments - Ratings methodologies need not routinely be disclosed publicly, but should be available to regulatory bodies as outlined in the comments to question 1.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

If ATC is used such that reliability can be impacted, than it should be covered under this SAR.

TRM and CBM are standards implementation calculations; while the methodology for their calculaiton should come under this SAR, alternative implementation methodologies (such as those used in the west) for the base reliability standard should also be identified and accomodated.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at:

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments - While generally meeting the same reliability goals, individual utility systems have been designed differently from each other based on geography, economic efficiency and load profiles. Care should be given to identify the overriding reliability goals of the SAR and then allow alternative implementation strategies that are cost-effective for each region.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments - Stating that rating methodologies need not be written or shared could be interpreted as an attempt to disrupt potential market power investigations.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments - Avoidance of equipment damage is applicable to the SAR, but to what degree is a question. The SAR should seek to avoid catastrophic equipment failure, but the amount of incremental loss of life that should be tolerated per incident is a risk factor that needs to be established by each transmission owner in their determination of ratings.

Please use the space below to submit any other comments you may have on this SAR:

Comments - The SAR designates that facility ratings will be determined by the transmission owner and that system operating limits will be determined by reliability authorities. However, the SAR does not draw a "bright line" between the two categories. In fact, the SAR as currently written repeatedly uses the same descriptive terms for both classifications. A clear dividing line should be established.

As a general note, standards should only state what actions are required and should not address what does not have to be done.

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If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

It is necessary that a Reliability Authority clearly define the considerations to be used by equipment owners in rating facilities. It allows potential constructors of new facilities to know how such new facilities will have capacity accredited to them. Uniformity in setting ratings ensures that the full capability of the interconnected system is utilized for both reliability and commercial purposes.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

It is fair and equitable to new entrants to the marketplace as well as to existing facility owners to know how the value (e.g. capacity) to be given for new facilities will be determined.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

ATC (or Available Flowgate Capability) should be very detailed in a separate SAR. This additional SAR should also cover exactly how both TRM and CBM are to be included.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission

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Capability Margins and Their Use in ATC Determination" available on the NERC website at:
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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The proposed SAR must have enforceability implicit in its wording. For example: "owners shall consider such items as" instead of the currently worded "should consider". Without such certainty, it may be possible to withhold capacity from the system which may provide economic benefit to the entity withholding such capacity.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

It is not possible to operate the interconnected system in such a way that no loss-of-life will occur. "Good Utility Practice" implicitly means balancing equipment risk against service risk.

Please use the space below to submit any other comments you may have on this SAR:

Comments

It is important that this SAR require the development of a detailed, written region-wide method to determine the capacity of equipment. Owners should be required to document exceptions. The Southwest Power Pool Criterion 12 is a public document, built by broad consensus, that details what shall be considered in determining facility ratings. Some limited latitude is given to facility owners. It is very important that there is confidence within a region and across the marketplace that all participants have facilities rated in a consistent manner. Exception reporting when compliance to the standard is not possible leads to more cost effective means to gain incremental increases in the interconnected system capability. Allowances for dynamic ratings in the operating arena are easily accommodated.

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SAR Commenter Information

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Background Information:

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- The scope of the SAR should be expanded to include:
- The scope of the SAR should be reduced to eliminate:

- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Methodology used to determine transfer capability must also be documented

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Transfer capability methodology must be public, facility ratings methodology must be available to the reliability authority

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

TRM should be addressed in the standard if TTC is covered; CBM should not be addressed in the standard.

TRM standard should address explicitly the normal variability in the TTC forecast. TRM should not address unanticipated system event (forced outage) impacting TTC. Any priority use of the transmission system should not be addressed in the TRM standard. TRM standard should allow both deterministic (based on extreme case) or probabilistic (based on operating experience) methodology. TRM determination methodology must be documented and made public. TRM accuracy should be measured.

Although CBM address transmission use related to system reliability, it introduces a priority use

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of the transmission system. Priority use of the transmission system is on the market domain and should not be address by the system reliability standard .

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments As ERCOT and the Western Interconnection, Québec Area within NPCC has asynchronous ties with the Eastern Interconnection . This allows direct control of the transfers on the ties and modifies significantly the methodology for determining Transfers Capabilities . The development of OS for Transfers Capabilities should take asynchronous ties into consideration.

Operating Limits and TTCs are a function of the NPCC criteria and NPCC has more stringent contingency criteria than some other Regions/Areas, i.e. NPCC Normal and Emergency Transfer Criteria, Document A-2 and multiple contingency criteria (stuck breakers and double corcuit tower contingencies). Furthermore Québec Area within NPCC has and should be allowed to maintain more stringent criteria than NPCC and NERC.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

Comments

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SAR Commenter Information

Name Ed Riley

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Background Information:

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- The scope of the SAR should be expanded to include:
- The scope of the SAR should be reduced to eliminate:

- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments While the methodology doesn't have to be made public, it should be available upon request.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

The standard should begin with defining TTC and process for computing, then defining TRM and how it is computed, and finally, defining ATC, the remainder after TTC & TRM.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments However, the definition and process for calculation of CBM needs more work by the industry.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments It should be noted, however, that this does not necessarily refer to manufacturer's equipment specifications, warranties and/or technical specifications, which are not necessarily in accordance with operating capabilities, but rather to the actual operating capabilities of the equipment.

Please use the space below to submit any other comments you may have on this SAR:

Comments Based on the current wording in the SAR, the CAISO feels that it cannot sufficiently understand the distinction to be able to accept or adequately comment on the sections, "System Operating Limits" and "Transfer Capability". The CAISO would like further clarification of what is intended by these two headings.

Under the heading "Detailed Description", the CAISO feels that the term "reliability Margins" should be defined as part of the SAR process.

In the same section, under the fourth bullet item, the CAISO feels that the portion of the phrase that reads "...and/or operational experience." should be eliminated, as this should be part of the process that creates the system studies.

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On page SAR-5, under the heading "System Operating Limits", bullet item 3 in the first section, the CAISO feels that the term Reliability is more appropriate to the intent of this item.

In the second section, under the same heading, the CAISO feels that it should be specified how many levels of contingency are required to be planned - n-1, n-4?

In the same section, the CAISO feels that the sentence should read "...must then ensure that the system is being planned and operated within planning criteria."

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SAR Commenter Information

Name Edward C. Stein

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Background Information:

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- The scope of the SAR should be expanded to include:
- The scope of the SAR should be reduced to eliminate:

- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Although the determination of equipment ratings, as a risk-based assessment, must be left to the equipment owners, the owners' rating methods need to be documented to ensure that transmission owners do not arbitrarily establish ratings to unfairly advantage unregulated market participants.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Rating methods must be available to market monitors and independent system operators. Moreover, the resulting operating limits should be publically disclosed. They are essential for market participants to form rational forward-looking strategies.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments Limit determining methodology needs to be documented and followed under the oversight of a Market Monitor.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments It is the equipment owner's concern and responsibility to protect its facilities from damage.

Please use the space below to submit any other comments you may have on this SAR:

Comments The ultimate purpose of this SAR was the documentation of an individual Transmission Owners methodology for determining equipment and facility ratings. However, then trying to address ATC, TRM and CBM within this SAR should be left to be addressed in a separate SAR.

The System Operating Limits addressed in this SAR does mention seasonal, normal, emergency and short term equipment ratings, but in the Equipment Ratings section it does not mention these various ratings. This SAR should address the appropriate application of various normal and emergency ratings of one hour, four hour and normal 24 hour equipment ratings in determining the operating limits in a separate SAR. These ratings should be standardized and

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

those responsible for the reliable operation of the system must use these standard ratings to minimize the number of TLRs that are imposed which will improve the transition to a smooth liquid market.

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SAR Commenter Information

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Background Information:

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Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments See below

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments The concern is with the accuracy of the ratings, whether transmission or generator. We need to know that the facility in question can deliver at its rated capability when required by the system, for the required time; or that an element will respond according to it's stated characteristic. Having an element unexpectedly fall short of it's rated capacity could adversely affect system reliability and security. The publication and use of accepted methodolgies provides assurance that the stated values are credible. In lieu of this, some other acceptable (whatever that might be) assurance is required. It would not be unreasonable to require that the ratings and methodology be auditable by parties that are impacted by the results.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments With regard to facility ratings, there are widely known standards (IEEE etc) that might apply to all regions. As noted by others, this is not to say that a single method be dictated, but only that a credible method be used that has some consistency with those used by others.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments The equipment owner has responsibility to take care of his own equipment by way of appropriate ratings, but having a critical element fail is not in the best interests of anyone, including the ensuing impact on system reliability and security. Including this objective in the SAR Purpose would not be incorrect, but it would seem to be common sense and is understood to be an objective, similar to that of protection of the environment and public and employee safety.

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Please use the space below to submit any other comments you may have on this SAR:

Comments At some point, the SAR might want to specify a common set of conditions for when the ratings apply. This might be under normal system operation, adverse or emergency conditions and for what length of time and for real time or planning time frames. These specifications would be an inherent part of the ratings. The requirement is to have credible ratings that can be relied upon for the stated conditions and purpose. Having equipment fall short of their ratings could have severe reliability and security consequences.

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E-mail this form between September 24 –October 25, 2002, to: sarcomm@nerc.com with “SAR Comments” in the subject line.

Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name George Bartlett

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Fax 504-310-5809

E-mail gbartle@entergy.com

Background Information:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a re commendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

Comments Entergy is concerned about the amount of "public" information and national and regional security. Therefore, we suggest that facility ratings be "made available to entities certified by NERC..", instead of making the ratings "public".

We also suggest that an entity's methodology for the determination of ratings should not be made "public" or "made available to" anyone else.

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SAR Commenter Information

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Background Information:

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Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Having documentation available insures that the methodology is engineering based.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments If a rating is called into question then the NERC or Regional Compliance Office can review the methodology for sound engineering.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

Comments

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SAR Commenter Information

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Background Information:

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Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

TRM should be addressed in the standard if TTC is covered, however CBM is a market related quantity. CBM was introduced to identify priority use of the transmission system.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments Transmission service is provided in a number of ways in NPCC based on the different energy markets that exist with the Region. Consideration should be given to accomodating these differences when developing the OS. TTCs are posted in NPCC and Control Area differences for these TTCs are accepted and identified however not mitigated. This allows the Control Areas to define their levels of acceptable risk and determine the impacts on their respective markets. NPCC has a control area that has asynchronuous ties with the Eastern Interconnection and the development of this OS should take this into consideration.

Operating Limits and TTCs are a function of the NPCC criteria and NPCC has more stringent contingency criteria than some other Regions/Areas, i.e. NPCC Normal and Emergency Transfer Criteria, Document A-2 and multiple contingency criteria (stuck breakers and double corcuit tower contingencies). Furthermore Areas within NPCC have and should be allowed to maintain more stringent criteria than NPCC.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

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Please use the space below to submit any other comments you may have on this SAR:

Comments

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If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name Jeff Mitchell

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Background Information:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a re commendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments The equipment owner should bear the responsibility for taking the risk of loading their equipment, as long as it does not threaten reliability of the system. If the system is planned and operated according to ratings and limits, then equipment damage is the risk of the owner and should not be mandated by this SAR.

Please use the space below to submit any other comments you may have on this SAR:

Comments There is confusion on what exactly is meant by the term "Transfer Capability". Since the SAR does not specifically address or include ATC type values or margins, does it refer to the transfer capabilities that are calculated in seasonal assessments from Region to Region or area to area? Clarification is needed in the wording of this SAR.

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SAR Commenter Information

Name Jim Cyrulewski (P.E.), Vice President-Operations, International Transmission Company and Manager of the Michigan Electric Power Coordination Center

Organization On behalf of the Michigan Electric Coordinated Systems (MECS)

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Background Information:

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Not documenting the methodology would seem to be poor business practice. A transmission owner should want to document the methodology to ensure all employees are following the same criteria and process for determining ratings.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments This is the best way to ensure that no stakeholder is having unfair access to such information. There is no security reason for withholding such information.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments Recognition needs to be given to the difference in transmission grid structure within the various interconnections. For example, the Western Interconnection is composed of many long radial transmission lines; the Eastern Interconnection is not.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments This should be one of the major objectives of this SAR

Please use the space below to submit any other comments you may have on this SAR:

Comments Having common definitions and standard terminology should be a major consideration when this standard is written. Also need to develop common time frames for application of ratings. These items are especially important to RTOs/ISOs/ITPs that could potentially span several states and regional reliability areas.

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SAR Commenter Information

Name John Horakh

Organization MAAC Staff

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Background Information:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments See Other Comments at end

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments See Other Comments at end

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

See Other Comments at end

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments See Other Comments at end

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments See Other Comments at end

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments See Other Comments at end

Please use the space below to submit any other comments you may have on this SAR:

Comments This is a general comment for this revised SAR, and does not include answers to the detailed questions above. MAAC and/or MAAC members may submit separate answers and comments to the detailed questions above. This revised SAR, when reposted for comments, should include a redlined version showing the changes made from the previous version. Otherwise, it is difficult and time consuming to figure out what has changed, by reviewing the Comments and Considerations, and by reviewing the questions on the new Comment Sheet. Knowledge of the changes is important, to determine whether or not you can accept the changes. This concept of providing a redlined version with a reposting should apply to all SARs and Organizational Standards.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Note – This form is to comment on version 2 of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The latest version of this SAR (FACILITY_RATINGS_01_02) is posted on the Standards web site at: <http://www.nerc.com/~filez/sar-approved.html>

E-mail this form between September 24 –October 25, 2002, to: sarcomm@nerc.com with “SAR Comments” in the subject line.

Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name John K. Loftis, Jr.

Organization Dominion Virginia Power

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E-mail john_loftis@dom.com

Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

consideration of those comments and the original and revised SAR are posted on the NERC Web Site at

<http://www.nerc.com/~filez/sar-approved.html>

The revised SAR has been re-posted for comment from September 24–October 25, 2002. Please review the revised SAR and complete this comment form to let the SAR DT know if you agree or disagree with the SAR DT's assessment that this SAR is ready to be developed into a standard.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a re commendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

9. Comments SAR Comments – Dominion Virginia Power (October 25, 2002)

10.

11. 1) The following statement appears under Purpose/Industry Need: "Determine facility ratings, system operating limits, and transfer capabilities necessary to plan and operate the bulkpower electric system....."

12. On page 5, last paragraph of 'Facility Ratings' Section says: "This standard does not require the development of a standard methodology for the calculation of facility ratings, nor does it require that the methodology used by the facility owner be documented."

13. The two statements seem contradictory-the purpose cannot be achieved without developing a standard methodology for determining the calculation of facility ratings.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

14. 2) As commented by Dominion, Duke and several other companies earlier, the determination of facility ratings and transfer capabilities should be under different SARs-they are different subjects.
- 15.
16. 3) The following statement appears on page 5, second paragraph:
17. "The standard will state that equipment owners must make applicable facility ratings (including steady-state and transient) public in a pre-defined form (including the conditions under which the ratings apply)."
18. This information cannot be made "public". The statement should be revised to clarify that the data recipients are those identified in the third paragraph and not the general public.
- 19.
20. 4) The following statement appears in the first paragraph (second sentence) of page 4:
21. "This standard will require that reliability margins be considered in the determination of transfer capability and system operating limits where appropriate."
22. It appears to conflict with the following statement from the second paragraph under Transfer Capability on page 6:
23. "This standard does not specifically address available transfer capability (ATC), or its margins."
24. It also appears to conflict with the third bullet item on page 6:
25. "documentation of the determination of transfer capability values, including risk evaluations, and margin evaluations"
- 26.
27. 5) In general, the SAR seems to be poorly organized and contains many broad statements that could be interpreted in different ways. It could benefit from a re-write. It needs to identify its scope in specific, concise terms.
- 28.
- 29.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

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Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name Kenneth Wilson

Organization Western Electricity Coordinating Council

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E-mail ken@wecc.biz

Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

consideration of those comments and the original and revised SAR are posted on the NERC Web Site at

<http://www.nerc.com/~filez/sar-approved.html>

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SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments See WECC proposal below.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

9. Comments The members of the Compliance Process Task Force (CPTF) of the Western Electricity Coordinating Council believe the purpose of the Operate Within Limit should include: The purpose of the proposed standard is to require transmission path operators and owners to certify that seasonal operating limits for bulk power transmission paths (BTP) have been developed using NERC and Regional Council planning standards and that those operating limits have been provided to operating personnel, reliability coordinators, other participants in the path, the Region Council office, and other affected Regional Council members. If transfer capability limits have not been developed properly or distributed to operating personnel, reliability coordinators, and path participants, the path may be operated outside of limits potentially resulting in loss of load, uncontrolled separation, or causing damage of facilities when an outage of a path element occurs.

10. The industry need for major transmission paths is as follows.

11. Transmission Operators through technical studies need to determine and clearly define Operating Transfer Capability Limits (OTC) for each major transmission path for each

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

operating season using NERC and regional planning criteria. Properly determining path operating limits and distributing those limits to operating employees, other path owners, and reliability coordinators is part of a process to operate a reliable electrical system. Each Path Operator submits documentation that an officer of the organization certifies that OTC limits for major transmission paths as defined by the Regional Reliability Organization were established prior to each operating season using NERC and Regional Council-approved study methods and that the approved OTC limits are provided to operating personnel, reliability coordinators, and others as appropriate.

12. .A brief description of the proposed standard is as follows.

13. Standard

14. Each transmission path operator of each transmission path as defined by the Regional Council (attachment 1 for WECC) must submit documentation that an officer of the organization certifies that:

15. a. OTC limits for the operating season have been established using NERC and regional-approved study methods and processes for the season and for contingency conditions;

16. b. OTC Limits and nomograms (if applicable) for the designated period for the Bulk Power Transmission Paths ("BPTP") identified by the region have been provided to Path Operating Personnel;

17. c. OTC Limits and nomograms for the designated period for the BPTP have been provided to other participants in the BPTP;

18. d. Operating Transfer Capability Limits and nomograms for the designated period for the BPTP have been provided to Reliability Coordinators;

19. e. Operating Transfer Capability Limits and nomograms for the designated period for the BPTP have been provided to other affected entities; and

20. f. Operating Transfer Capability limits and nomograms for the designated period for the BPTP have been provided to the Regional Council office.

21. 3. Data Reporting Requirement

22. On or before December 1 for each "Winter Season," on or before May 1 for each "Spring Season," on or before July 1 for each "Summer Season," and on or before November 1 for each "Fall Season" specified by the region, each reporting party shall submit to the Regional Council office completed OTC certification forms (attachment 2). Each such season begins on the first day of the month immediately preceding the stated reporting date and ends on the day before the first day of the next season (e.g., the Spring Season runs from April 1 through May 31).

23. 4. Compliance Standard

24. A reporting party must accurately complete certification that OTC documentation has been completed and distributed.

25. 5. Noncompliance Levels

26. Level 1: The path operator accurately certifies that items (a) and (b), and all but one of the items (c)-(f) listed above were properly performed for the operating season.

27. Level 2: The path operator accurately certifies that items (a), (b), and all but two of items (c)-(f) listed above were properly performed for the operating season.

28. Level 3: The path operator accurately certifies that item (a) was properly performed but not all of items (b)-(f) listed above were properly performed.

29. Level 4: The path operator cannot certify that item (a) listed above was properly performed.

30. 6. Sanctions

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

31. For purposes of applying the sanctions specified for violations of this criterion, the "Sanction Measure" is Normal Path Rating and the "Specified Period" is the Most Recent Operating Season – Spring, Summer, Fall, or Winter (if required by the Regional Council)."

From: Bryan, Karl A NWD [Karl.A.Bryan@nwd01.usace.army.mil]
Sent: Monday, October 21, 2002 5:28 PM
To: 'sarcomm@nerc.com'
Subject: SAR_Comment_form_for_2nd_posting_of_SAR_0924

Note – This form is to comment on version 2 of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The latest version of this SAR (FACILITY_RATINGS_01_02) is posted on the Standards web site at: <http://www.nerc.com/~filez/sar-approved.html>

E-mail this form between September 23 –October 22, 2002, to: sarcomm@nerc.com with “SAR Comments” in the subject line.

Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name Karl Bryan

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Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s consideration of those comments and the original and revised SAR are posted on the NERC Web Site at

<http://www.nerc.com/~filez/sar-approved.html>

The revised SAR has been re-posted for comment from September 24, 2002 – October 23. Please review the revised SAR and complete this comment form to let the SAR DT know if you agree or disagree with the SAR DT’s assessment that this SAR is ready to be developed into a standard.

The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments There should be adequate information provided so that a third party is able to come up with similar facility ratings. This would prevent the manipulation of facility ratings for economic purposes.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments In order to verify that the facility rating was accurately represented, the methodology used to determine the facility rating should be used. This would lessen any second guessing as to the honesty/accuracy of the rating. Also, this would assist the security coordinators in assessing the trustworthiness of a declared facility rating.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

The ATC calculation data should at a minimum be made available to the general public so that:

a) system security evaluations can be made

b) the need for additional transmission lines can be debated in a public forum

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at:

ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?
Yes
No
Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?
Yes
No
Comments

Please use the space below to submit any other comments you may have on this SAR:

Comments

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Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

consideration of those comments and the original and revised SAR are posted on the NERC Web Site at

<http://www.nerc.com/~filez/sar-approved.html>

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SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments: Rating methodology should be documented.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments: We do not believe that standard should require the rating methodology to be made public. The facility owner should have a methodology and should apply it consistently.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No. There should be a separate Standard for ATC, similar to the existing NERC Planning Standard I.E.

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No. TRM and CBM should be included in the ATC Standard (see #3 above).

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments: There should not be a different standard for each Region. However, application of a standard may be followed differently by different entity. For example, a different ambient temperature may be considered by different entity for calculating conductor ratings.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments: We do not consider reliability as an adverse impact. Actually, a reliable and robust transmission system would enhance marketing activities.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments: Equipment damage or loss of life is one of the major consideration in developing equipment rating or its loading capability.

Please use the space below to submit any other comments you may have on this SAR:

Comments: We commend the SARDT for revising the earlier version based on the comments received. The revised SAR has more details than the earlier one; however, it is still not very clear and not well organized. Therefore, we do not agree that this SAR is ready for use in developing a standard. We believe that this SAR needs more work to make it complete, clear, and better organized. From the White Paper on NERC's Set of Organization Standards, we understand that after the first posting, the successive posting should include several items. The second posting of this SAR does not include items, such as compliance requirements, trial use testing requirements, implementation plan, and cost estimates.

Additionally, we would like to offer some general comments and some specific comments on this SAR for SARDT consideration. The following comments have been offered mainly from

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

the Planning perspective:

General Comments:

We and others made comments earlier that this SAR should be split into two or more SARs. Though the SARDT responded with the reasons that it is premature and we need to keep the number of standards minimum, with the revised version we strongly believe that this SAR should be divided into three SARs:

- A. Facility Ratings,
- B. Development of Operating Limits, and
- C. Transfer Capability (including ATC)

The reason for this comment is that these three are different issues. Of course, the facility ratings and transfer capability are related, but that does not mean that they should be parts of the same standard. Models and transfer capability are related and/or load forecast and models are related, does not mean that load forecast, model building, and transfer capability should be covered in one standard.

Specific Comments:

1. On page SAR-2, Transmission Provider should be included since they use ratings and transfer capabilities to assess transmission service that is available.
2. What does the word "respect" (facility rating) mean? Does it mean "consider" or does it mean "enforce"?
3. On page SAR-5, what are transient facility ratings and why should any facility ratings be made public? It is true that all applicable ratings should be provided to the transmission operator/provider, but why must the ratings be made public? It is suggested that ratings for specific pieces of equipment not be made public also due to national security issues.
4. The definition of facility does not include transformer as a facility. In many cases, transformer with circuit breaker, switches, CTs could constitute as a facility.
5. System problems to be avoided as listed include cascading outages, uncontrolled system separation, voltage instability, and transient instability. What about thermal overloads? Are they ok? Does the SAR DT consider thermal loading as "proxy" for some of the system problems? How can one determine transfer capability based on cascading?
6. On page SAR-4, paragraph 3, last sentence, "Appropriate.....operation". We do not believe that simply calculation of ratings, operating limits or transfer capabilities form the basis for the proper planning to ensure reliable operation. It is adherence to these limits in Planning and consistent application of these limits in operation ensures reliable system performance.
7. On page SAR-4, system operating limit definition states that Stability and Voltage limits will be reflected as a permissible loading level? What does this mean? How do you determine it?
8. Should there be a difference between limit recognized in Planning versus in Operation? The SAR does not address this.
9. On page SAR-5, System Operating Limits section needs better organization.
10. On page SAR-5, all applicable equipment rating includes seasonal, normal, emergency, short-term etc. What's difference between emergency and short-term? We should try to avoid use of etc in the Standard.
11. On page SAR-5, third bullet in System Operating Limits section "Accuracy of System models". How would the Standard address this?
12. On page SAR-5, last part states, ... must then ensure that the followings do not occur...

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

How does one ensure all of the items listed? Since relays are generally not modeled in simulations, and you can not completely guard against equipment malfunction or human error, it is difficult to “ensure”. We believe that one can guard against violation of reliability performance criteria in Planning and Operation which in turn would greatly enhance system security.

13. Transfer Capability – Which transfer capability is referred to? NITC, FCITC, FCTTC, non-simultaneous, simultaneous, or all of the above?
14. The STARDT should follow major part of the existing NERC Standard Measurement II.C.M1,II.C.M2, and IE in developing SAR.

Again, we appreciate the opportunity to provide these comments and our perspective.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Note – This form is to comment on version 2 of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The latest version of this SAR (FACILITY_RATINGS_01_02) is posted on the Standards web site at: <http://www.nerc.com/~filez/sar-approved.html>

E-mail this form between September 24 –October 25, 2002, to: sarcomm@nerc.com with “SAR Comments” in the subject line.

Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name Klaus Lambeck

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Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments In the future, system operation and planning will be with the independent system operator. Therefore, the methodology needs to be documented to ensure proper application.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Facility limits is a risk-based decision which should remain with the owner/investor, but relevant regulatory agencies or organizations should be afforded access.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments A clarification of the term "regional" should be provided. "Regional" under an RTO could mean something different than "regional" under reliability standards. Because RTOs will operate a common or uniform system, there should not be major differences between regions within the RTO. The SAR need not address regional differences.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments The purpose of the SAR is reliability not "to avoid equipment damage."

Please use the space below to submit any other comments you may have on this SAR:

Comments

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SAR Commenter Information

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Background Information:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments ANSI and IEEE Standards determine equipment ratings which are used to determine facility ratings. It would be a better use of the limited NERC resource not to re-invent the wheels but to focus on system issues and not on how a piece of equipment is to be rated.

The second part of this SAR is to determine the Transfer Capability. The existing NERC Planning Standards have established criteria and measures on how to determine operating limits and transfer capabilities.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments ANSI and IEEE Standards are developed using an open and public process. In fact, the new NERC standard making process is to adopt the ANSI process.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a re commendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

Comments If the requester believes the existing NERC planning standards are not sufficient to determine transfer capability, then it would be appropriate to propose revision of existing standards to address the shortcomings. As it is, this SAR request new NERC standards with no proposal on what to do with the existing NERC standards.

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SAR Commenter Information

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Background Information:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

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Yes

No

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6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a re commendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

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SAR Commenter Information

Name Thomas C. Mielnik

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Background Information:

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Methodology documentation facilitates the use of consistent facility loading limits by planning and operating functions. A facility methodology document provides for better coordination between owners on jointly-owned facilities. A methodology document will encourage a careful review and result in more accurate rating of facilities for the benefit of system reliability.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Making methodology documentation public further encourages careful review and setting of facility ratings, as well as, better coordination between owners of neighboring facilities for the benefit of system reliability.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

Total Transfer Capability is a reliability quantity that should be covered by the standard. A definition for Reliability Margin should be added to the standard. The reliability aspects of TRM should be included in this definition.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments MAPP utilizes local generation loading limits to maintain transient stability limits. If this practice is not covered by "permissible loading level" under the definition of System Operating Limit in the SAR, then the MAPP utilization of local generation loading limits to maintain transient stability limits should be listed as a Regional Difference for MAPP.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

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The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments The SAR should include some basic requirements for owners to follow in setting facility ratings. If owners take too much risk with equipment, the reliability of the system is endangered.

Please use the space below to submit any other comments you may have on this SAR:

Comments The SAR should contain basic requirements for owners in setting facility ratings, such as ratings should be based on the equipment and facility's physical characteristics. Improper ratings of facilities will not only cause equipment damage but will endanger system reliability.

MidAmerican believes that there is a reliability purpose for the standard and fully supports the development of a standard from the SAR. We ask that changes be made in accordance with our comments above. Otherwise, we believe the SAR is well-written.

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SAR Commenter Information

Name Scott Gass`

Organization PJM

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Fax 610-666-2296

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Background Information:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

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Comments

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SAR Commenter Information

Name Ron Szymczak

Organization Exelon

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E-mail Ronald.Szymczak@exeloncorp.com

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Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

Exelon believes that the development of this SAR, if it includes the development of ATC & TTC calculations, has reliability and business implications based on the number of options that will be considered in the development and implementation of this Standard. As such we recommend that the development of this SAR be a joint effort between NAESB WEQ and NERC.

TTC/ATC Calculations:

Both TTC and ATC are transfer capability values. The NERC defines transfer capability as "the measure of the ability of interconnected electric systems to reliably move or transfer electric power from one area to another area by way of all transmission lines (or paths) between those areas under specified system conditions". Exelon is not aware

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of any transfer capability values that are calculated to be unreliable. Therefore both TTC and ATC must be considered reliability values governed by a standard. In highly interconnected portions of the Eastern Interconnection ATC cannot be correctly derived from TTC by the following equation $TTC=ATC+TRM+CBM+Reservations$ because the TTC and ATC are normally limited by different limiting elements and contingencies. Therefore both TTC and ATC must be considered reliability values governed by a standard.

The following aspects of ATC and its margins need to be addressed:

All entities that are responsible for ATC calculations must have an ATC methodology that is documented and publically available. The methodology will be reviewed by the NERC or the appropriate authority on a yearly basis to determine if it is compliant with the standard. The methodology must address the following topics:

1. ATC calculations must be consistent with transmission organizations and/or owners published planning criteria. For example contingencies, generation dispatches and the amount of counterflow used that are not planned for by the transmission owner should not be applied to ATC calculations. This is based on the reasoning that all firm transmission customers have equal rights to the transmission system. Therefore scenarios not planned for native load customers should not be applied in determining ATC.

The consistency between ATC calculations and a transmission organizations and/or owners published planning criteria is meant to be applied to the planning horizon and does not apply to actual transmission or generation outages and resulting generation dispatches modeled in an ATC base case. That is, a transmission organizations and/or owners planning criteria should always be applied where appropriate to the base case conditions modeled.

The methodology must also describe the process used to ensure that TTC and ATC calculations are consistent with transmission organizations and/or owners published planning criteria.

2. Include a narrative explaining how TTC and ATC values are determined.

3. Account for how the reservations and schedules for firm (non-recallable)and non- firm (recallable) transfers, both within and outside the transmission provider's system, are included.

4. Account for the ultimate points of power injection (sources) and power extraction (sinks) in TTC and ATC calculations. Explain how source and sink points used in the calculation are determined.

5. Describe how incomplete or so-called partial path transmission reservations are addressed. (Incomplete or partial path transmission reservations are those for which all transmission reservations necessary to complete the transmission path from ultimate source to ultimate sink are not identifiable due to differing reservation priorities, durations, or that the reservations have not all been made.)

6. Require that TTC and ATC values and postings within the current week be determined at least once per day, that daily TTC and ATC values and postings for day 8 through the first month be determined at least once per week, and that monthly TTC and ATC values and postings for months 2 through 13 be determined at least once per month.

7. Indicate the treatment and level of customer demands, including interruptible demands.

8. Specify how system conditions, limiting facilities, contingencies, transmission reservations, energy schedules, and other data needed by transmission providers for the calculation of TTC and ATC values are used and shared with other TTC/ATC calculators. In addition, specify how this information is to be used to determine TTC and ATC values. If some data is not used, provide an explanation.

9. Describe how the assumptions for and the calculations of TTC and ATC values change over different time (such as hourly, daily, and monthly) horizons.

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10. Describe the practice used for netting of transmission reservations for purposes of TTC and ATC determination.

TRM:

The entity responsible for TTC/ATC calculations must have a published and publicly available methodology describing how TRM values are determined. The methodology will be reviewed by the NERC or appropriate authority on a yearly basis to determine if it is compliant with the standard. The methodology must address the following points:

1. Specify the update frequency of TRM calculations.
2. Specify how TRM values are incorporated into ATC calculations.
3. Specify the uncertainties accounted for in TRM and the methods used to determine their impacts on the TRM values. The following components of uncertainty, if applied, shall be accounted for solely in TRM and not CBM: aggregate load forecast error (not included in determining generation reliability requirements), load distribution error, variations in facility loadings due to balancing of generation within a control area, forecast uncertainty in transmission system topology, allowances for parallel path (loop flow) impacts, allowances for simultaneous path interactions, variations in generation dispatch, and short-term operator response (operating reserve actions not exceeding a 59- minute window). Any additional components of uncertainty shall benefit the interconnected transmission systems, as a whole, before they shall be permitted to be included in TRM calculations.
4. Describe the conditions, if any, under which TRM may be available to the market as non-firm transmission service.
5. Describe the formal process to grant any variances, if allowed, to individual transmission organizations and/or owners from the TRM methodology.
6. Require review of the consistency of the transmission owner's TRM components with its published planning criteria. Describe the process used to determine if a transmission owner's TRM components are consistent with its published planning criteria. The review will be done at minimum on an annual basis. A TRM value is considered consistent with published planning criteria if the same components that comprise TRM are also addressed in the planning criteria. The methodology used to determine and apply TRM does not have to involve the same mechanics as the planning process, but the same uncertainties must be considered and any simplifying assumption explained. It is recognized that ATC determinations are often time constrained and thus will not permit the use of the same mechanics employed in the more rigorous planning process.
7. Require TRM values to be periodically updated (at least prior to each season (winter, spring, summer, and fall), as necessary, and made available to transmission users in the electricity market.

CBM:

As long as CBM is not a paid for reservation, the entity responsible for ATC/TTC calculations must have a published and publically available CBM methodology. The methodology will be reviewed by the NERC or the appropriate authority on a yearly basis to determine if it is compliant with the standard. The methodology must address the following points:

1. Specify that the method used to determine the generation reliability requirement as the basis for CBM shall be consistent with the generation planning criteria. Require review of the consistency of the CBM components with its published planning criteria. Describe the process used to determine the consistency. The review will take place at minimum on an annual basis. A CBM value is considered consistent with published planning criteria if the same components that comprise CBM are also addressed in the planning criteria. The methodology used to determine and apply CBM does not have to involve the same mechanics as the planning process, but the same uncertainties must be considered and any simplifying assumptions

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explained. It is recognized that ATC determinations are often time constrained and thus will not permit the use of the same mechanics employed in the more rigorous planning process.

2. Specify the frequency of calculation of the generation reliability requirement and associated CBM values. Require CBM values to be periodically updated (at least annually) and available to the transmission users in the electricity markets.
3. Require that generation unit outages considered in a transmission provider's CBM calculation be restricted to those units within the transmission provider's system.
4. Require that CBM be preserved only on the transmission provider's system where the load-serving entity's load is located (i.e., CBM is an import quantity only).
5. Describe the inclusion or exclusion rationale for generation resources of each LSE including those generation resources not directly connected to the transmission provider's system but serving LSE loads connected to the transmission provider's system.
6. Describe the inclusion or exclusion rationale for generation connected to the transmission provider's system but not obligated to serve native/network load connected to the transmission provider's system.
7. Describe the formal process and rationale to grant any variances, if allowed, from the CBM methodology.
8. Specify the relationship of CBM to the generation reliability requirement and the allocation of the CBM values to the appropriate transmission facilities. The sum of the CBM values allocated to all interfaces shall not exceed that portion of the generation reliability requirement that is to be provided by outside resources. Explain how CBM is incorporated into ATC calculations.
9. Describe the inclusion or exclusion rationale for the loads of each LSE, including interruptible demands and buy-through contracts (type of service contract that offers the customer the option to be interrupted or to accept a higher rate for service under certain conditions).
10. Describe the inclusion or exclusion rationale for generation reserve sharing arrangements in the CBM values.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments **There are some entities that act as Control Areas that encompass multiple transmission owners other Control Areas include only one transmission owner. The calculation of ATC & TTC appears to differ between the larger all encompassing organizations compared to the smaller organizations. Exelon sees a need for a review of practices to ensure consistency between all Transmission organizations and/or owners.**

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Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments: **Exelon believes that the development of this SAR, if it includes the development of ATC & TTC calculations, has reliability and business implications based on the number of options that will be considered in the development and implementation of this Standard. As such we recommend that the development of this SAR be a joint effort between NAESB WEQ and NERC.**

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

Comments

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Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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consideration of those comments and the original and revised SAR are posted on the NERC Web Site at

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments The methodologies for determining equipment and facility ratings are imbedded in and spread over many documents (drawings, specifications, calculations, standards, etc.). This documentation is sufficient for determining how the facility ratings were determined without creating additional documentation. Furthermore, we see no need for a NERC standard to require something that is already being done utilizing existing industry standards and guides.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments See Comment for Question 1 above. Also, much documentation is proprietary.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments As long as the standard focuses on requiring ratings, not defining methodologies. It may be appropriate to standardize the methodologies for how SOME ratings and limits are calculated. However, since such standards would have significant commercial concerns, they should be vetted through the NAESB process. As such, it would seem appropriate for the development of this standard to be accompanied by a request from NERC to NAESB to consider the development of rating methodology standards for certain types of transmission facilities.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments Avoidance of equipment damage is fundamental to ensuring that reliability of equipment and facilities are maintained. This, in turn, contributes to maintaining reliability of the grid. Operations personnel need to have a clear understanding that exceeding limits or ratings that ultimately result in equipment damage could be adverse to system reliability.

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Please use the space below to submit any other comments you may have on this SAR:

Comments Under the Detailed Description on page SAR-5, section titled System Operating Limits, 2nd paragraph, recommend for clarification that the lead statement be revised to say, "In determining system operating limits, the following must be considered:..." Also, recommend deleting the word "all" in the first bullet under this lead statement. The word "applicable" is sufficient.

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SAR Commenter Information

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Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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- 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:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

The Standard should require that the facility owner document the method(s) and assumptions (e.g., wind speed, ambient temperature, etc.) used to arrive at a facility or component rating. The Standard must not be used as a means to direct a specific method or uniform (i.e., industry-wide) assumptions.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The Standard should not require public posting of the documentation, but that the information be available on request as a non-confidential document. It might be more acceptable to all stakeholders to require each facility owner's documentation be placed on file with the Area Reliability Authority.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

Provision should be made in the Standard to explain the application of the Margins, what is or is not consistent with the reliability intent of the Margins, and to insure consistent application

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and interpretation of these margins in the determination of transfer capability/operating limits between Regions and among Areas within each Region.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

The development and application of a standard for determining Operating Limits should respect the processes extant in all regions. It should not seek a lowest common denominator, or minimum level, but allow for each Region, and Areas/Reliability Authorities within each Region, to determine the acceptable level of risk and the appropriate criteria consistent with it. The NPCC Basic Criteria for Design and Operation (document A-2) contains some of the strictest requirements for determination of transfer capabilities/operating limits among all of the NERC Regions. A NERC Standard should not subvert or supersede that acceptable level of risk.

The Standard should also allow sufficient flexibility to allow Regions and Areas to address specific issues that are not of general concern interconnection-wide. An example of this could be parallel asynchronous HVdc ties between Areas: is an intra-regional issue within NPCC, but could be considered an inter-regional issue to ERCOT or WSCC.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

Inconsistent treatment of transfer capability vs. operating limits, or the potential for different

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rules used to determine ATC/TTC that those used to determine real-time operating constraints. Inconsistent use of models can also lead to conflicting results, so the Standard should seek to insure that a consistent model/base representation is used for the determination of transfer capability and operating limits.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Avoiding or limiting equipment damage is implicit in the development of facility ratings. The assumptions that the facility owner(s) use in arriving at the facility rating is based on the physical characteristics of the hardware, environmental considerations, and anticipated loss of life resulting from exposure to operation outside those parameters assumed in that facility rating. A standard that explicitly requires "avoidance of equipment damage" is both unrealistic and not enforceable.

Please use the space below to submit any other comments you may have on this SAR:

Comments

General Comments:

A Standard that attempts to address facility ratings, operating limits and transfer capabilities in a single document may not be realistic. It might have been easier to address these issues through two (or more) standards: one for ratings of facilities, and a second to address determination of transfer limits. As proposed the Standard leaves open the issue of criteria or rules that would be used to apply the ratings of facilities to determine transfer limits. Are the criteria left to the individual Regions and Areas by default, or will there be a separate Standard to address the "calculation of transfer limits," and appropriate criteria to be applied?

The proposal does not clearly distinguish the concept of System Operating Limit vs. a Transfer Capability. We infer that the difference is that the operating limit is specific to a set of transmission facilities, and the capability is a measure of the power that can be transferred between two Areas using all paths and, thereby, incur (or encourage) loop flow or unscheduled transmission usage on parallel (indirect) flow paths.

The Standard should uniformly apply to all functions involved in the scheduling and use of the transmission system (that is, it should apply to Balancing and Interchange authorities and transmission service providers, also.)

The Standard should also encompass Reliability Principles #5 (communication), #6 (personnel training), and #7 (security assessment).

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Specific comments concerning the Detailed Description:

(3rd paragraph, 2nd line) "safety" should be "security"? Safety is an issue that is well addressed through NEC, ANSI, OSHA, CSA, etc. Attempting to address safety issues through this Standard would appear to be beyond the intent of the request.

(4th paragraph, 3rd bullet) facility ratings should include minimum and maximum voltage ratings. Inability to maintain adequate voltage in pre- or post-contingency situations can impact the operability, and, by extension, the reliability of the interconnected system.

(4th bullet) reference to "voltage limits" should differentiate equipment voltage ratings from the concept of voltage constrained transfers. Further, voltage constrained transfers can be either steady-state or dynamic.

Equipment Ratings

Care should be taken to protect the facility owner(s) right to rate the equipment, but the Standard must also insure coordination individual component ratings where multiple ownership is involved (e.g., ties between transmission owners, between Areas or Regions, or between a generator owner and the transmission owner) and that each is consistent within their respective (documented) design standards and rating methodology(ies).

Facility Ratings

Development of the Standard should consider including a generator's design real (MW) and reactive (MVAR) capabilities (net and gross) as accurate information concerning generator capability(ies) is critical to perform voltage constrained transfer limit assessment.

The facility owner(s) method and assumptions used to determine ratings MUST be documented and available to the Area Reliability Authority.

System Operating Limits

(page SAR-6, 1st paragraph) requirement for "static" limits or "nomograms" would appear to preclude the use of a real-time security constrained dispatch. Control Areas in the Northeast and Mid-Atlantic Regions have been using computer-based dispatch systems for over 25 years; a Standard that requires static limits, nomograms, and loading guides to manually dispatch the system would both severely constrain system operation and adversely impact system reliability.

Transfer Capability

This part of the document is vague as to whether it is addressing longer-range reliability planning assessment or short-term (day-ahead) scheduling and commitment. (1st paragraph, 2nd sentence) does the use of the term "planning" imply scheduling or reliability assessment? Please clarify.

(3rd paragraph) should clearly state that the separate entities determining transfer capabilities must use consistent (and documented) methods, criteria, rules and procedures. The term "projected transmission use" needs to be defined (and who projects and what do they project?)

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SAR Commenter Information

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Background Information:

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- 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:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Ratings without supporting documentation could create a perception that the facility owner has no accountability. Most facility owners will already have a documentation process in place, since it is good engineering and business practice.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments This documentation need only be made available to reliability authorities.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments The facility owner establishes the ratings and assumes the risks associated with those ratings. For example, a facility owner may choose an emergency rating that allows for some excess loss of life expectancy.

Please use the space below to submit any other comments you may have on this SAR:

Comments:

- Page 4, under "Equipment Ratings"; add "performance testing" to the list of items that owners should consider for establishing ratings.
- Page 5, under "Facility Ratings", second paragraph; the word "public" is too broad. This requirement should be narrowed such that facility ratings need only be made available to industry participants.
- Page 6, under "Transfer Capability", third paragraph; specifying "transmission owner and third party system topology" is cumbersome. This could be simplified to "relevant system topology".

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- Page 6, under "Transfer Capability", "This standard will address:", fourth bullet; the reference to "margin evaluations" should be eliminated. Margins are outside the scope of this standard.
- The entities making the transfer capability calculations need to be responsible for coordinating the modeled generation dispatch with the generation owners. Some regional planning and operating models often have an unrealistic redispatch of generation. This implies a redispatch that may not be agreeable to the generation owner. Such an unrealistic generation scenario can significantly skew the calculated transfer capabilities.

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If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments While it may be commercially and legally prudent for a facility owner to have documented procedures, the standard should not require this documentation.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments The facility owner may make several decisions based on experience and judgement that would make public availability of the methodology meaningless.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments The facility owner determines the ratings. It is there choice if they are willing to let the equipment be damaged.

Please use the space below to submit any other comments you may have on this SAR:

Comments

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Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name Richard Gilkey

Organization PJM Industiral Customer Coalition

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Background Information:

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- The scope of the SAR should be expanded to include:
- The scope of the SAR should be reduced to eliminate:

- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

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Yes

No

Comments

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8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

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Comments In the detailed description section, paragraph 3, I suggest removing the word "safely". While safety is everyone's concern, it is outside the scope of NERC's objective - Reliability. Also in paragraph 3, "detailed knowledge of equipment ratings and facility ratings for all of the components" is too all-encompassing. I would suggest knowledge of critical ratings to be more practical. Under System Operating Limit, planning and operating criteria and ratings are and should be different. Are you suggesting that operations must be held to the same ratings as planning? This should not be the case. Under Equipment Ratings, again, operations should not be held to the same planning criteria ratings. Under Facilites Ratings - the determination whether the information is public or not is outside the scope of reliability. Under System Operating Limits, the phrase "within the bulk power system" should be removed. The implication is that there could be a different local standard versus one established by the RA.

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SAR Commenter Information

Name Randy R. Lindstrom

Organization Nebraska Public Power District

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Background Information:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments This is an existing NERC Planning Standard requirement and this process facilitates the inter-regional coordination of facility ratings.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

TTC and TRM are critical reliability components of the ATC determination. TTC and TRM should be determined separately and should be determined by the owner of the limiting facilities. TRM needs to be a separate analysis since it accounts for solution accuracy of the models, uncertainties with actual operating conditions / load levels and short term operating reserves in the MAPP region.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments The MAPP Region can be limited by transient stability, low frequency damping, transient voltage response, voltage stability, relay margins and thermal loading. The TTC limits for some MAPP flowgates are established in coordination with other flowgates which involves multiple facilities and owners. The MAPP Region also utilizes flow-based methodologies to determine the committed uses of the existing system and ATC.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

Comments NPPD does not support the use of contract path flowgates as valid indicators of regional transfer capability limitations.

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SAR Commenter Information

Name Peter Mackin

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Background Information:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

6. TRM should be assessed during the determination of SOL and TC since the values determined for SOL and TC are by definition supposed to account for uncertainty in system operating conditions and system models (which is what TRM is for). A value for TRM does not have to be explicitly determined. Therefore, when calculating ATC, only CBM would be used to the extent that TRM is incorporated into the determination of TC.

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Regarding the possibility of Regional Differences:

7. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

8. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a re commendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

9. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments If avoidance of "equipment damage" is to be included in the pupose at all, it should be modified to specify "undue equipment damage" since theoretically "equipment damage" occurs every time we energize a piece of equipment.

Please use the space below to submit any other comments you may have on this SAR:

Comments Under the section on System Operating Limits, the first sentence needs to be modified to add "with concurrence from the transmission owners". So the sentence would read:

System operating limits must be established by reliability authorities and planning authorities with concurrence from the transmission owners to define the maximum reliable loadings for facilities within the bulk power system.

Page SAR-4, last sentence of the third paragraph: The sentence should read as follows. Appropriate equipment ratings, system operating limits and transfer capabilities form the basis for the proper planning and reliable operation of the system.

The way the sentence was originally worded implies that proper planning ensures reliable

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operation which is only true if the system is operated to the same standard. This can become a bigger issue if the system is planned to a lesser criteria than it has to operate to.

Page SAR-5, last paragraph, the first two bullets: WECC has a question for the SAR DT. What is the difference between cascading outages and uncontrolled separation within the system? Uncontrolled separation within the system is normally the result of cascading outages.

Page SAR-6, first paragraph: WECC would like this paragraph to clarify the idea that operating limits may be static or dynamic. A slight rewording of the sentence as follows would help:

Depending upon local system conditions, a system operating limit may be a relatively static quantity (indicating relative independence of the conditions on other facilities) or may be a dynamic quantity expressed in nomograms or equations indicating dependencies on other interfaces or transmission facilities, prior-outage conditions and other system conditions.

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SAR Commenter Information

Name Paul Johnson

Organization AEP

Telephone

Fax

E-mail

Background Information:

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments While it may be prudent for the facility owner to document the rating methodology employed, NERC should refrain from developing standards that do not add to the reliability of the interconnected system and merely increase filing burdens. Regardless of the existence of rating methodology documentation, this proposed standard must require that the equipment owner establish a rating for each equipment apparatus and apply that rating in a consistent and non-discriminatory manner.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Among other reasons, there may be proprietary information used in assessing risk as one of the inputs to establishing the ratings. There is no reliability based need to 'make public' an equipment owner's rating methodology. The reliability-based requirement is that the facility ratings --themselves -- are public and that the ratings determined by the equipment owner are applied in a consistent and non-discriminatory manner.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

Available Transfer Capability (ATC) is a commercial quantity. NERC previously defined ATC (in 1996) as ".transfer capability remaining in the physical transmission network for further

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commercial activity over and above already committed uses". However, transfer capability (also defined by NERC) is a solely a reliability-based term and defined as " ..the measure of the ability of the interconnected electric system to reliably move or transfer power from one area to another over all transmission lines (or paths) between those areas under specified system conditions." These definitions remain appropriate and applicable in the current industrial environment. NERC should incorporate the transfer capability concepts, without alteration, into the proposed Standard as documented in the NERC May 1995 "Transmission Transfer Capability" reference document.

Transfer Capability -- weather in the operating real-time environment or in the planning environment -- is determined using models and numerous assumptions. As such, in the real time operating mode, the system should not be allowed to operate to the calculated transfer capability value (or the calculated System Operating Limit) , but rather a value lower than the theoretical or calculated value(s) in order to account for inherent modeling 'error' and inaccuracies in the assumptions in order to maintain reliability of the interconnection. Therefore, the need for operating reliability margins should be acknowledged in the proposed Standard. Similiarly, beyond the real-time environment (the planning environment) reliability margins (TRM) must be acknowledged to insure that the inaccuracies in forecasting do not result in unreliable operation in the real time.

This standard should only address the reliability based the need for operating (real-time) margins and predictive margins (TRM). This standard should not address the explicit calculation of ATC.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

- Yes
 No

Comments Because of ERCOT's unique situation as a single regional reliability organization, control area, and independent operator, regional differences relative to ATC should be permitted, as needed.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

- Yes
 No

Comments Assuming that this standard does not address the ATC (beyond reliability margins for real time operating environment and the planning horizon) there does not appear to be

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

aspects that unduely impact the market.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments There is no need to explicitly address 'equipment damage' in this SAR. The extend of 'allowable' equipment damage will be considered by the equipment owner when the owner determines the proper rating for the equipment. Loss of equipment life (a modest form of equipment damage) is generally recognized as an acceptable risk in establishing emergency ratings. In any case, the SAR does not seem to preclude an asset owner from establishing ratings that would avoid loss of life or other equipment damage.

Please use the space below to submit any other comments you may have on this SAR:

Comments The Purpose/Industry Need and Brief Description seem to ignore the requirement that ratings and limits ensure no violation of reliability performance criteria (the "Table 1 Standards"). As such the Purpose/Industry Need and Brief Description are inconsistent with the body of the SAR.

The SAR also fails to make a clear connection that operating within established facility ratings and operating limits will avoid cascading outages,etc. Consider modification to the standard Purpose/Industry Need as follows: "Determine facility ratings, system operating limits, and transfer capabilities necessary to plan and operate the bulk electric system within predefined facility and operating limits such that cascading outages, uncontrolled system separation, and voltage and transient instability are avoided.

The 'measurements' associated with this proposed standard should measure the 'what' and the 'results' and should not simply be a measure of when data was submitted or if documentation is available.

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SAR Commenter Information

Name Malcolm Thaden

Organization Potomac Electric Power Company

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E-mail mvthaden@pepco.com

Background Information:

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Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

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3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

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Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a re commendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments Avoidance of equipment damage and level of acceptable risk is part of the consideration in determining acceptable ratings and should be left to the equipment owner's discretion.

Please use the space below to submit any other comments you may have on this SAR:

Comments

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Note – This form is to comment on version 2 of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

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Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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consideration of those comments and the original and revised SAR are posted on the NERC Web Site at

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments While there are benefits to documentation of the methodology, it should not be required, since the facility owner should be solely and exclusively responsible for assigning ratings to a facility, and making documentation a requirement would imply that challenges or forced changes to the methodology used are possible.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Mandatory public review is productive only if the facility owner can be forced to change the methodology.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

Transfer capability determination, which is addressed explicitly in this SAR, is likely to have implications for the commercial market; however, explicit requirements on how ATC, TRM, and CBM are determined should be developed separately from this SAR.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments Because ERCOT is itself an interconnection and is a single control area, some NERC policies may need to recognize that requirements different from those imposed upon smaller control areas that are part of a larger interconnection are appropriate. Such requirement areas include time error monitoring, time error correction, inadvertent interchange management, control performance, load-shedding and system restoration, and disturbance reporting.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments The facility owner can set facility ratings to account for damage potential at its option.

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Comments

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SAR Commenter Information

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Background Information:

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- The scope of the SAR should be reduced to eliminate:

- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

NO, because ATC, TRM and CBM relate to scheduling procedures for determining ability to make sales, not operating limits and should be addressed outside of this SAR

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments In the West the Reliability Coordinator (Reliability Authority?) is not involved in the development of Facility Ratings, System Operating Limits or Transfer Capability.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments if the Industry Standards and other guides mentioned in the Equipment Ratings section are applied appropriately, equipment damage will be avoided.

Please use the space below to submit any other comments you may have on this SAR:

Comments

Clarification is needed whether the Reliability Authority means Reliability Coordinator. If not, then what is the difference between the two functions?

Detailed Description, P. 4, first paragraph: Does 'reliability margins' mean TRM and CBM specifically (if so, it should state this) or does it mean the margins included in the Reliability Criteria related to adding margin to the calculated Operating Limit to ensure that the calculated limit does not place the system on the edge of stability? If the latter, then the language must be firmed up, avoiding use of words like 'considered' and 'where appropriate'. Use of these type of margins is mandated by reliability criteria and is always appropriate.

Also on P. 4, in the definition of Facility, the information in parenthesis in the first paragraph of Facility Ratings on Page 5 should be substituted for the information in parenthesis existing

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here.

Page 4, last sentence of the third paragraph: The sentence should read as follows. Appropriate equipment ratings, system operating limits and transfer capabilities form the basis for the proper planning and reliable operation of the system. The way the sentence was originally worded implies that proper planning ensures reliable operation which is only true if the system is operated to the same standard. This can become a bigger issue if the system is planned to a lesser criteria than it has to operate to.

It would be helpful if the definitions of System Operating Limit and Transfer Capability were further clarified. Is System Operating Limit intended to be a 'rated maximum' or 'seasonal maximum' rating, and then the Transfer Capability be the daily or instantaneous limit?

Page 5, Facility Ratings, Last Sentence: Delete '..because it does not materially impact system reliability.' This could be challenged because there are times when there is a disagreement on a rating, and the methodology for determining the rating must be provided in order to resolve the disagreement. The rating of the facility could impact reliability if it is rated too high and causes system problems due to overload.

Page 5, System Operating Limits, first sentence: Delete "..by reliability authorities and planning authorities..". Regional differences will determine who calculates the System Operating limits.

Second sentence: Delete (as determined by the reliability authority). In the west the Reliability Authority (Reliability Coordinator) is not involved in the determination of how soon system operating limits must be available.

Second bullet: Contingency Criteria is not defined. This should instead say Reliability Criteria.

Third bullet: need clarification of 'system protection - what does this include? I.e., system protection is often referred to as relaying, however Remedial Action Schemes which can be independent of relaying is also considered system protection. What should be included in this definition of system protection.

Page 5, second set of bullets:

delete first three bullets. The Reliability Performance Criteria sets the requirements for system performance.

Page 6: Transfer Capability, first sentence: Delete 'planned' so that the sentence reads 'Use of the system shall not exceed the transfer capability. This avoids conflict between 'planned use' versus 'actual use'.

First paragraph: BPA would like this paragraph to clarify the idea that operating limits may be static or dynamic. A slight rewording of the sentence as follows would help: Depending upon local system conditions, a system operating limit may be a relatively static quantity (indicating relative independence of the conditions on other facilities) or may be a dynamic quantity expressed in nomograms or equations indicating dependencies on other interfaces or transmission facilities, prior-outage conditions and other system conditions.

Third Paragraph: Include Transmission Operator as one of the entities that may be involved in calculating transfer capabilities. Again, how does this differ from calculating System Operating Limits? The same factors seem to apply. Adherence to Reliability Criteria should be included in the considerations.

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I believe that the rest of the Transfer Capability section is not relevant to Transfer Capability, but to the Standard as a whole, and therefore a new section should be started, titled "This Standard Will Address:"

Measures:

the first bullet should be deleted. Response times are determined regionally.

Need to specify who the measures apply to. Some measures may apply to a regional organization, and others to a Transmission Owner, etc.

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If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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- The scope of the SAR should be expanded to include:
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- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments : Methodology documentation facilitates the use of consistent facility loading limits by planning and operating functions. A facility methodology document provides for better coordination between owners on joint owned facilities. A deliberate methodology is more likely to encourage a careful review and capture the limiting equipment.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments : The requirement for public disclosure is a business decision.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

Total Transfer Capability (TTC) should continue to be determined by facility owners or operators through reliability analysis. Typically the tariff administrator increments and decrements ATC. Therefore TTC should be included in the SAR and ATC should not be included.

A definition of Reliability Margin should be added to the SAR. The reliability aspects of TRM should be included in the definition.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments : Permissible loading level is not defined under the definition of System Operating Limit developed for this SAR. Each Region may implement different forms of the loading level control. MAPP for example utilizes local generation loading limits to maintain transient stability limits. If this practice is not covered by permissible loading level, then it should be added to the SAR as a Regional Difference for MAPP.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

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The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments : The selected asset management choice by the facility owner will address the equipment risk issue.

Please use the space below to submit any other comments you may have on this SAR:

9. Comments : Owners should be required to set ratings based on the equipment and facility's physical characteristics. The ratings should not be based on transfer capability.

10. MAPP believes that the NERC SAR has described the reliability purpose for the standard and is well written in all aspects except those specifically described above in our comments. We fully support NERC developing a standard from the SAR and ask that these changes are made.

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SAR Commenter Information

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Background Information:

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- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

The Standard should require that the facility owner document the method(s) and assumptions (e.g., wind speed, ambient temperature, etc.) used to arrive at a facility or component rating. The Standard must not be used as a means to direct a specific method or uniform (i.e., industry-wide) assumptions.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The Standard should not require public posting of the documentation, but that the information be available on request as a non-confidential document. It might be more acceptable to all stakeholders to require each facility owner's documentation be placed on file with the Area Reliability Authority.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

Provision should be made in the Standard to explain the application of the Margins, what is or is not consistent with the reliability intent of the Margins, and to insure consistent application

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and interpretation of these margins in the determination of transfer capability/operating limits between Regions and among Areas within each Region.

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

The development and application of a standard for determining Operating Limits should respect the processes extant in all regions. It should not seek a lowest common denominator, or minimum level, but allow for each Region, and Areas/Reliability Authorities within each Region, to determine the acceptable level of risk and the appropriate criteria consistent with it. The NPCC Basic Criteria for Design and Operation (document A-2) contains some of the strictest requirements for determination of transfer capabilities/operating limits among all of the NERC Regions. A NERC Standard should not subvert or supersede that acceptable level of risk.

The Standard should also allow sufficient flexibility to allow Regions and Areas to address specific issues that are not of general concern interconnection-wide. An example of this could be parallel asynchronous HVdc ties between Areas: is an intra-regional issue within NPCC, but could be considered an inter-regional issue to ERCOT or WSCC.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

Inconsistent treatment of transfer capability vs. operating limits, or the potential for different

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rules used to determine ATC/TTC that those used to determine real-time operating constraints. Inconsistent use of models can also lead to conflicting results, so the Standard should seek to insure that a consistent model/base representation is used for the determination of transfer capability and operating limits.

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Avoiding or limiting equipment damage is implicit in the development of facility ratings. The assumptions that the facility owner(s) use in arriving at the facility rating is based on the physical characteristics of the hardware, environmental considerations, and anticipated loss of life resulting from exposure to operation outside those parameters assumed in that facility rating. A standard that explicitly requires "avoidance of equipment damage" is both unrealistic and not enforceable.

Please use the space below to submit any other comments you may have on this SAR:

Comments

General Comments:

A Standard that attempts to address facility ratings, operating limits and transfer capabilities in a single document may not be realistic. It might have been easier to address these issues through two (or more) standards: one for ratings of facilities, and a second to address determination of transfer limits. As proposed the Standard leaves open the issue of criteria or rules that would be used to apply the ratings of facilities to determine transfer limits. Are the criteria left to the individual Regions and Areas by default, or will there be a separate Standard to address the "calculation of transfer limits," and appropriate criteria to be applied?

The proposal does not clearly distinguish the concept of System Operating Limit vs. a Transfer Capability. We infer that the difference is that the operating limit is specific to a set of transmission facilities, and the capability is a measure of the power that can be transferred between two Areas using all paths and, thereby, incur (or encourage) loop flow or unscheduled transmission usage on parallel (indirect) flow paths.

The Standard should uniformly apply to all functions involved in the scheduling and use of the transmission system (that is, it should apply to Balancing and Interchange authorities and transmission service providers, also.)

The Standard should also encompass Reliability Principles #5 (communication), #6 (personnel training), and #7 (security assessment).

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Specific comments concerning the Detailed Description:

(3rd paragraph, 2nd line) "safety" should be "security"? Safety is an issue that is well addressed through NEC, ANSI, OSHA, CSA, etc. Attempting to address safety issues through this Standard would appear to be beyond the intent of the request.

(4th paragraph, 3rd bullet) facility ratings should include minimum and maximum voltage ratings. Inability to maintain adequate voltage in pre- or post-contingency situations can impact the operability, and, by extension, the reliability of the interconnected system.

(4th bullet) reference to "voltage limits" should differentiate equipment voltage ratings from the concept of voltage constrained transfers. Further, voltage constrained transfers can be either steady-state or dynamic.

Equipment Ratings

Care should be taken to protect the facility owner(s) right to rate the equipment, but the Standard must also insure coordination individual component ratings where multiple ownership is involved (e.g., ties between transmission owners, between Areas or Regions, or between a generator owner and the transmission owner) and that each is consistent within their respective (documented) design standards and rating methodology(ies).

Facility Ratings

Development of the Standard should consider including a generator's design real (MW) and reactive (MVAR) capabilities (net and gross) as accurate information concerning generator capability(ies) is critical to perform voltage constrained transfer limit assessment.

The facility owner(s) method and assumptions used to determine ratings MUST be documented and available to the Area Reliability Authority.

System Operating Limits

(page SAR-6, 1st paragraph) requirement for "static" limits or "nomograms" would appear to preclude the use of a real-time security constrained dispatch. Control Areas in the Northeast and Mid-Atlantic Regions have been using computer-based dispatch systems for over 25 years; a Standard that requires static limits, nomograms, and loading guides to manually dispatch the system would both severely constrain system operation and adversely impact system reliability.

Transfer Capability

This part of the document is vague as to whether it is addressing longer-range reliability planning assessment or short-term (day-ahead) scheduling and commitment. (1st paragraph, 2nd sentence) does the use of the term "planning" imply scheduling or reliability assessment? Please clarify.

(3rd paragraph) should clearly state that the separate entities determining transfer capabilities must use consistent (and documented) methods, criteria, rules and procedures. The term "projected transmission use" needs to be defined (and who projects and what do they project?)

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SAR Commenter Information

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E-mail rwm@maininc.org

Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

consideration of those comments and the original and revised SAR are posted on the NERC Web Site at

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SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments The current revision of this SAR appears to contain an inconsistency that is shrouded in semantics that allows a requirement to exist in one category but is specifically removed from another interrelated category. In addition, although the SAR should be targeting new standards and not reusing current templates, it is important that the experience gained from current implementation that started in 1999 is not disregarded, as appears to be the case.

As to the experience: A Planning Measurement requiring a documented ratings methodology (specific methods are left to the owners) was field tested in 1999. It went through multiple subsequent public postings and revisions. This work was combined in NERC Board formal approval 6/12/2001. This Measurement has been self certified and on-site audited across North America. NERC compliance activities in this area have caused companies to change transmission ratings to effect consistent and documented ratings. The documented methodologies have provided a basis for checking reasonableness of the ratings and consistency.

As to the inconsistency: Not only are operating limits based on stability and/or voltage considerations, but many are based on and equal to the facility ratings. The SAR states that the "standard will address documentation of the determination of transfer capability values..." which "must respect system operating limits" which "must address all applicable ... facility ratings". Experience has shown that determination documentation of ratings has resulted in corrections to ratings. For consistency, if the SAR suggests transfer values determination documentation, following the relationships stated above, the requirement for rating methodology determination should be the same.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments The document should be readily available to NERC and the Regions (or equivalent function) for verification and consistent application. Values are not JUST FOR MODEL BUILDERS. Many resultant ratings establish transfer capability limits. It seems reasonable to provide documentation of fundamental methodology as defined in current measurements on request. Such documentation should show consistent and reasonable application.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

It is reasonable to address the fundamental aspects of how the providers apply TRM and CBM in their transfer capability determinations. Detailed numerical should not be necessary. A logical conceptual explanation should be sufficient.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments From a conceptual standpoint, the Regional differences can usually be explained by application, e.g. all areas can use CBM from a conceptual standpoint but if the area is essentially an island, the calculations will yield a zero value - hence the statement - "we do not use it"

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

[Redacted area]

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments For new players, the obvious is not always obvious. Silence on an issue is not helpful. The fact that the question is being asked here means that others also want to know.

Please use the space below to submit any other comments you may have on this SAR:

Comments

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Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

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- The scope of the SAR should be reduced to eliminate:

- *Other comments:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments The methodology might as well be public since anybody with a strong interest to see it could obtain it by subpoena. Considering that it can't be kept from public view anyway, making it public might help to dispel suspicion.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments Equipment damage should be covered by the transmission owners' ratings methodology. Some TO's will accept loss of life ("damage") on certain facilities.

Please use the space below to submit any other comments you may have on this SAR:

Comments

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If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Fax

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Background Information:

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments Within the context of this Standard, a Transmission Owner should be required to document their ratings methodology for audit purposes.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments This information should only be made available on a confidential basis to the TO's RTO and for NERC audits.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

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Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments Not based on the the intent described in this standard request. When the details of the actual standard are developed, it is possible that regional differences may be identified.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments Avoidance of equipment damage is a commercial issue taken into account by the equipment owner in establishing equipment and facility ratings.

Please use the space below to submit any other comments you may have on this SAR:

Comments In the Detailed Description, IP suggests the following change in the third paragraph of the System Operating Limit Section:

Change the bullet reading "- cascading outages" to "- outages cascading outside of a transmission owner's system or group of cooperating transmission owners' systems".

This change is proposed because IP believes transmission owners and providers should be able to manage the risk on their respective system. Outages that only affect the transmission owner or the group of cooperating transmission owners and their respective customers should be managed by that/those transmission owner/owners.

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If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name Dennis W. Chastain

Organization TVA

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Background Information:

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments The current practice of submitting rating methodologies to the Regional Councils, upon request, under confidentiality practices is sufficient. The methodologies should be treated as proprietary documentation. The Compliance/Audit process is the established checks and balances process to review the equipment owners rating methodologies against the Standard.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

See general comments on this SAR below.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments Differences will exist due to the lack of a single North American standard for facility ratings (do we want to go there?). However, those differences need not be identified in the SAR.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments Inherently, ratings are established to mitigate equipment damage/failure as a business practice to ensure employee/public safety, optimize equipment life cycle performance, as well as ensure system reliability. Therefore, equipment damage should not be added to the Purpose of this SAR.

Please use the space below to submit any other comments you may have on this SAR:

Comments With respect to questions 3 and 4, the merger of planning and operations standards into a single standard is difficult within itself. When multiple objectives are added to that initiative, the standards become cumbersome and too lengthy to drive home the importance of a single objective. Therefore, the scope of this standard needs to focus on the ratings/limits aspect while the determination of transfer capability (TTC, TRM, CBM, and ATC) needs to be addressed by a separate reliability standard. The commercial aspects of ATC come more into play in the OASIS environment (transmission tariffs, ATC posting requirements, and ATC coordination).

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SAR Commenter Information

Name David Scarpignato

Organization Baltimore Gas & Electric Company

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Background Information:

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- The scope of the SAR should be reduced to eliminate:

- *Other comments:*

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

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SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a re commendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Please use the space below to submit any other comments you may have on this SAR:

9. Comments : On page SAR-4 Equipment Ratings, the following items listed do not directly affect equipment ratings:

- Equipment warranties
- Age of the equipment
- Economic lifetime of the equipment
- Problems with the equipment
- Maintenance condition

We believe that these items should not be part of the standard.

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SAR Commenter Information

Name Gerald Rheault

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1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments A requirement in this standard for owner documentation of facility rating methodology should be directed to only address issues related to impacts on reliability or public safety. There should be some "good utility practice" guidelines to limit the risk an owner may elect to take, or some onus on the owner to provide equipment failure mitigation in a reasonable time, as it relates to reliability impacts.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments The owner of the facility should have a documented methodology to determine facility ratings but he should not have to make it public. Any requirement of this standard for owner documentation of facility rating methodology should be directed to only address issues related to impacts on reliability or public safety. The Standard should require adherence to good utility practice, or an obligation on the owner to address the risk his approach to facility rating will have on reliability.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

This SAR must address all aspects of transmission and other system limits with a reliability

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

implication, including the nature of margins which are required for reliability. The capacity benefit margin (CBM) is not appropriate in this SAR, since it is related to generation adequacy.

TRM is needed to address unknowns such as; the cumulative impacts of loop flows arising from transactions outside the study scope and the deliverability of Reserves.

6. ATC is not appropriate in this SAR because it principally addresses commercial consideration and is not reliability related. It is derived by adjusting the reliability related parameter TTC lower, for TRM and the scheduled transactions on the transmission facility.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

Regarding the possibility of Regional Differences:

7. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments The level of reliability required differs between regions, so performance criteria as specified in Table I of the present NERC Planning Standards document, should reflect this fact. For example, in regions that are generation surplus, and characterized by remote generation and long transmission lines, the application of generator tripping following the loss of a transmission element (n-1) to preserve stability is an acceptable practice that has minimal impact on reliability.

Regarding market/commercial aspects of this SAR:

8. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

9. Comments The goal of this SAR should be to lead to standards which result in the definition of transmission which can be used for any and all commercial purposes; so that commerce can proceed subject only to these reliability limits. The standards must be compatible with Standard Market Design principles and must be flexible enough to allow risk management techniques to be used to maximize the amount of transmission available for all users. The standards should provide for a definition of limits which can be considered as the limits to flows, as opposed to commerce. These limits would be the limits which would require operator or control or protection intervention to ensure they are not violated. These limits may be evaluated before some reliability margins are applied.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

10. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments The owner's right to determine ratings must be preserved. However, there may be a requirement to consider the impact of equipment damage and extended outages on reliability; perhaps in the form of a requirement for long term contingency planning (the need for spares may be one aspect). Although equipment damage can have reliability impacts, the commercial impacts are usually much more significant.

Please use the space below to submit any other comments you may have on this SAR:

Comments Manitoba Hydro believes that the Facility Ratings should be a separate SAR. There are at least two other proposed SARs that are equally dependent on Facility Ratings; namely, the SAR - Assess Transmission Future Needs and Develop Transmission Plans and the SAR - Monitor and Assess Short-term Transmission Reliability - Operate within Limits. Therefore why should the Facility Ratings be a part of this SAR rather than the Planning SAR or the Short-term Reliability SAR?

11. The standard will require that reliability margins be considered in the determination of transfer capability. Consequently, the nature of the reliability margin must be defined in the SAR. Such margins might reflect:

12. • The accuracy of system models – the basic network, loads, generator models
13. • Uncertainty in system condition modeling – load levels, generation patterns
14. • Worst contingencies
15. • Operation of control systems (e.g., phase shifters) which can operate independently of the system conditions
16. • The cumulative impacts of loop flows arising from transactions outside of the study scope
17. • Deliverability of reserves
18. • Restoration of reserve levels
19. • The limitations of the transaction analysis functions – simplifications for posting, evaluation
20. • Corrections from the measurement point to the sale point for transmission
21. • Margins to ensure system protection (e.g., out-of-step protection) does not operate for any anticipated and studied contingencies
 - Treatment of counterflows

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The latest version of this SAR (FACILITY_RATINGS_01_02) is posted on the Standards web site at: <http://www.nerc.com/~filez/sar-approved.html>

E-mail this form between September 24–October 25, 2002, to: sarcomm@nerc.com with “SAR Comments” in the subject line.

Please review the changes made to the SAR and answer the questions in the yellow boxes.

If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

Name Albert M. DiCaprio

Organization MAAC

Telephone 610 - 666 - 8854

Fax

E-mail dicapram@pjm.com

Background Information:

The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” 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:

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

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

consideration of those comments and the original and revised SAR are posted on the NERC Web Site at

<http://www.nerc.com/~filez/sar-approved.html>

The revised SAR has been re-posted for comment from September 24–October 25, 2002. Please review the revised SAR and complete this comment form to let the SAR DT know if you agree or disagree with the SAR DT's assessment that this SAR is ready to be developed into a standard.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments

Methodology is a "How" (i.e. a commercial decision). Standards must concentrate on the "What". What ratings are needed to ensure reliability of the transmission system. The settings of the ratings are what the security analysis programs use. Those programs do not deal with what 'thought' process was used to derive those numbers.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments

No (see above). The only need is for the ratings to be made available to those who use the ratings for security analysis and planning.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

NERC standards should focus on ATC values that relate to the ability of the local region to transfer power without causing uncontrol outages, instability et al.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at:

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The inclusion (in paragraph 3) of the word 'safely'. Is safety a NERC objective? It may sound cold, but NERC does not need to write standards for safety. How this term is defined may impact alternative market solutions.

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments

Equipment damage is a 'design criteria' of the facility owner. How much use an owner may want to apply to a facility is the owner's decision. A critical facility may be needed and the Industry may wish the owner to be more careful in operating the facility - but if the Industry wants/needs a facility then the industry should build a new facility OR pay the owner to operate differently.

Please use the space below to submit any other comments you may have on this SAR:

Comments

Detailed Description Section

"Detailed knowledge... of all components....is needed" There is a question whether the standard must require such a mandate. Suppose someone develops a new process that looks at real flows to determine the 'Operating Security Limit' - would they still need to use all the component data? Would they have to give that data to even if it were not used? The standard should require that all applicable data be supplied.

Definition of System Operating Limit - A 'System' limit is the right focus for NERC. There is a problem with the phrase "without violating applicable facility ratings and reliability criteria" (as defined by the planning studies). This sounds like NERC will force everyone to report every violation of thermal limits even when the problem does not affect the 'system'. Further, that phrase seems to imply that everyone must abide by Planning limits even if system conditions are different from the planned conditions! This would seem to be operationally wrong as well as impinging on agreements between Transmission Operators and Transmission Owners who are willing to 'violate' a local limit that has no impact on the rest of the interconnected system.

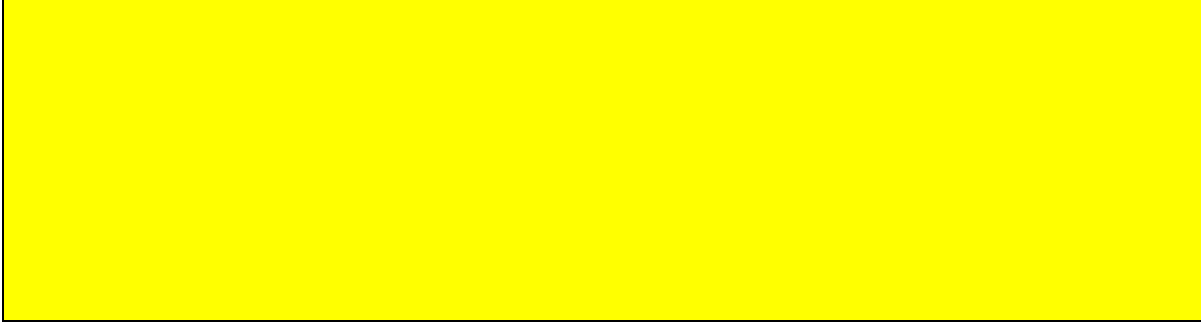
Equipment Ratings Section

"...must respect limits ... in operations..." As in the above, operations should not be blindly constrained to planning limits when conditions don't warrant it, or when the transmission system is not threatened (SARs are written about what standards NERC should be developing. SARs are not (per the BOT) to get involved in the How of operations.)

System Operating Limits Section

"...must be established ...within the system..." Is this getting away from the notion of 'System' impacts verses Control Area impacts?

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If you have questions, please call Maureen Long at 305-891-5497 or send a question to spm@nerc.com.

SAR Commenter Information

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Background Information:

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- 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:*

Most of the respondents indicated that there is a reliability-related need for a standard to be developed to address these issues. Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, and Regional Councils. The SAR DT considered the comments submitted by each industry participant and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants. The comments and the SAR Drafting Team’s

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The SARDT believes from industry comments received to date that although facility ratings must be made public, the methodology used by equipment owners to determine these ratings need not be written or disclosed.

1. Should this standard require that the methodology used to determine facility ratings be documented?

Yes

No

Comments The term 'methodology' should be explained to exclude business practices.

2. Should this standard require that the methodology used to determine facility ratings be made public?

Yes

No

Comments Under the present wording of II.C.S1, these ratings are as a result of Regional, subregional, power pool, and individual transmission provider/owner planning criteria. As such, the particular methodologies are proprietary in nature, and by forcing them to become public record, litigation would undoubtedly follow to force transmission providers/owners to divert from their established criteria. Having this documentation available for review by the appropriate compliance body should be sufficient. In addition, allowances should be made for differences regionally, between utilities, and even within a utility, assuming all methodologies are based on sound engineering practice.

The SARDT believes from industry comments received to date that Available Transfer Capability (ATC) and its margins include both reliability and commercial aspects. ATC and the transmission capability margins* used to determine it (TRM and CBM) are not included in this SAR.

3. Should this standard include requirements related to ATC determination?

Yes

No

4. Should this standard include requirements related to Transmission Reliability Margin (TRM) and/or Capacity Benefit Margin (CBM)*?

Yes

No

5. If you answered, "Yes" to question 5 above, please identify what aspects of ATC and its margins should be addressed and at what level of detail.

*Further information regarding CBM and TRM, can be obtained by reading "Transmission Capability Margins and Their Use in ATC Determination" available on the NERC website at: ftp://ftp.nerc.com/pub/sys/all_updl/pc/atcwg/tcmpaper.pdf

SAR Comment Form for 2nd Posting of the Determine Facility Ratings, Operating Limits, and Transfer Capabilities SAR

Regarding the possibility of Regional Differences:

6. Are you aware of any Regional differences that should be identified in this SAR?

Yes

No

Comments None within the local region. Interconnections to other utilities are normally governed by MOUs and other agreements.

Regarding market/commercial aspects of this SAR:

7. Are you aware of any aspect of the revised SAR that would have an adverse impact on markets?

Yes

No

Comments

The SAR DT received a recommendation that the purpose/industry need be modified to indicate that one of the purposes was to avoid equipment damage:

8. Should avoidance of equipment damage be added to the Purpose of this SAR?

Yes

No

Comments There already exist standards by which designs are completed, and avoidance of equipment damage is already assumed.

Please use the space below to submit any other comments you may have on this SAR:

Comments Care should be taken to cover the requirements of the existing planning standard II.C.S1.M1-M2, dealing with facilities ratings. In addition, it formerly contained a section discussing the coordination of tieline ratings between entities, but that has been removed. It would be prudent to revisit this issue, particularly with the proliferation of independent power producers on transmission systems, although this might be more appropriate in the NAESB arena.