

Consideration of Comments on Draft 2 of the Proposed SAR and Modifications to Facility Ratings Standards — Project 2009-06

The Facility Ratings Standard Drafting Team (FR SDT) thanks all commenters who submitted comments on the second draft of standard FAC-008-2 — Facility Ratings and its associated Standards Authorization Request (SAR). This standard and SAR was posted for a 30-day public comment period from August 10, 2009 through September 9, 2009. Stakeholders were asked to provide feedback on the SAR and standard through a special electronic comment form. There were 39 sets of comments, including comments from more than 90 different people from over 45 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

All comments are publicly posted at the following site:

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Several commenters suggested revising the parenthetical in R1 and R2 for clarity. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements. The FR SDT removed the word “turbine” from R1 as well as the parenthetical phrase and revised the requirement to better reflect the intent of R1 and R2. The Intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

Most stakeholders agree that R1 allows more latitude for the Generator Owner in how it supports the technical basis for its generator Facility Ratings. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements. Two stakeholders suggested that the standard should not apply to Generator Owners and that MOD standards more appropriately address the need for generator ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.

Several commenters suggested that the black box approach led to more confusion for the requirements rather than clarifying them as the FR SDT intended. Several stakeholders suggested better clarity to the requirements was needed. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of

interconnection. We have revised R1 and R2 (see above). Several stakeholders suggested that Requirement R2 should address both Normal and Emergency Ratings, consistent with Requirement R3. We have revised Requirement R2, Part 2.4.2 to "The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings." Still other stakeholders suggested that more clarity for R2 was needed (see revised R2 above).

Several stakeholders pointed out that there are 2 sets of VSLs for R3. The first set is for R3 and the second set is for R4. The FR SDT corrected this error. Other stakeholders suggested revising Requirement R2, Part 2.3 to change the word "respect" to "reflect" or "corresponds to". The FR SDT disagrees because the intent of Requirement R1, Part 1.2 is to make sure that the most limiting Facility is not exceeded. The rating may be lower for other reasons. Similar comments were received regarding Requirement R3, Part 3.3. Several commenters suggested revisions to the VSLs. The FR SDT agreed and made the suggested revisions unless they were no longer applicable due to revisions to the requirement. It was also suggested that Requirement R7 should include Transmission Owner(s). The FR SDT agrees and has made the revision.

One commenter noted the following: {We note that the consideration of comments to the August comments stated that "The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to "Lower". " However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs.}

The FR SDT revised the VRF's to lower for R1 and R2.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

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The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

		Commenter	Organization	Industry Segment											
				1	2	3	4	5	6	7	8	9	10		
1.	Group	Philip R. Kleckley	SERC Planning Standards Subcommittee			X									
		Additional Member	Additional Organization	Region	Segment Selection										
		1. Bob Jones	Southern Company Services	SERC	1										
		2. David Marler	Tennessee Valley Authority	SERC	1										
		3. John Sullivan	Ameren Services Company	SERC	1										
		4. Charles Long	Entergy	SERC	1										
		5. James Manning	North Carolina Electric Membership Corporation	SERC	3										
		6. Pat Huntley	SERC Reliability Corporation	SERC	10										
2.	Group	Guy Zito	Northeast Power Coordinating Council												X
		Additional Member	Additional Organization	Region	Segment Selection										
		1. Ralph Rufrano	New York Power Authority	NPCC	5										
		2. Alan Adamson	New York State Reliability Council, LLC	NPCC	10										
		3. Gregory Campoli	New York Independent System Operator	NPCC	2										
		4. Roger Champagne	Hydro-Quebec TransEnergie	NPCC	2										

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			1	2	3	4	5	6	7	8	9	10								
5.	Kurtis Chong	Independent Electricity System Operator	NPCC	2																
6.	Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1																
7.	Manuel Couto	National Grid	NPCC	1																
8.	Chris de Graffenried	Consolidated Edison Co. of New York	NPCC	1																
9.	Brian D. Evans-Mongeon	Utility Services	NPCC	8																
10.	Mike Garton	Dominion Resources Services, Inc.	NPCC	5																
11.	Brian L. Gooder	Ontario Power Generation Incorporated	NPCC	5																
12.	Kathleen Goodman	ISO - New England	NPCC	2																
13.	David Kiguel	Hydro One Networks Inc.	NPCC	1																
14.	Michael R. Lombardi	Northeast Utilities	NPCC	1																
15.	Randy MacDonald	New Brunswick System Operator	NPCC	2																
16.	Greg Mason	Dynegy Generation	NPCC	5																
17.	Bruce Metruck	New York Power Authority	NPCC	6																
18.	Chris Orzel	FPL Energy/NextEra Energy	NPCC	5																
19.	Robert Pellegrini	The United Illuminating Company	NPCC	1																
20.	Michael Schiavone	National Grid	NPCC	1																
21.	Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC	3																
22.	Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10																
23.	Lee Pedowicz	Northeast Power Coordinating Council	NPCC	10																
3.	Group	Jalal Babik	Electric Market Policy		X		X		X	X										
Additional Member Additional Organization Region Segment Selection																				
1.	Louis Slade	SERC	6																	
2.	Mike Garton	NPCC	5																	
4.	Group	Denise Koehn	Bonneville Power Administration		X		X		X	X										
Additional Member Additional Organization Region Segment Selection																				
1.	Thong Trinh	Communications & Grid Modeling	WECC	1																
2.	Jack Allison	Federal Hydro Projects	WECC	3, 5, 6																

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5.	Group	Richard Kafka	Pepco Holdings, Inc. - Affiliates	X		X		X	X																																	
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6.	Group	Tom Bradish	RRI Energy Inc					X	X																																	
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7.	Group	Sam Ciccone	FirstEnergy	X		X	X	X	X																																	
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8.	Group	Carol Gerou	NERC Standards Review Subcommittee											X																												
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7.	Joseph Knight	Great River Energy	MRO	1, 3, 5, 6																																																								
8.	Alice Murdock	Xcel Energy	MRO	1, 3, 5, 6																																																								
9.	Scott Nickels	Rochester Public Utilities	MRO	4																																																								
10.	Dave Rudolph	Basin Electric Power Cooperative	MRO	1, 3, 5, 6																																																								
11.	Eric Ruskamp	Lincoln Electric System	MRO	1, 3, 5, 6																																																								
9.	Group	Ben Li	IRC Standards Review Committee		X																																																							
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6. Steve Myers	ERCOT	ERCOT	2																																																									
7. James Castle	NYISO	NPCC	2																																																									
10.	Individual	Benjamin Church	NextEra Energy Resources					X																																																				
11.	Individual	Hugh Francis	Southern Company	X		X		X																																																				
12.	Individual	Sandra Shaffer	PacifiCorp	X		X		X	X																																																			
13.	Individual	Duncan Brown	Calpine Corporation					X																																																				
14.	Individual	Frank Gaffney	Florida Municipal Power Agency, and its Member Cities, Fort Pierce Utilities Authority and Kissimmee Utility Authority	X		X	X		X																																																			
15.	Individual	Ed Stein	Self-retired														X																																											

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		Commenter	Organization	Industry Segment										
				1	2	3	4	5	6	7	8	9	10	
16.	Individual	James Starling	SCE&G	X		X		X	X					
17.	Individual	Baj Agrawal	Arizona Public Service Co.	X				X						
18.	Individual	Alice Murdock	Xcel Energy	X		X		X	X					
19.	Individual	Kasia Mihalchuk	Manitoba Hydro	X		X		X	X					
20.	Individual	Chifong Thomas	Pacific Gas and Electric Co.	X		X		X						
21.	Individual	James Stanton	SPS Energy									X		
22.	Individual	Edward Davis	Energy Services, Inc	X		X		X	X					
23.	Individual	Vladimir Stanisic	Ontario Power Generation					X	X					
24.	Individual	Greg Mason	Dynegy Inc.					X						
25.	Individual	John Sullivan	Ameren	X		X		X	X					
26.	Individual	Mark Kuras	PJM		X									
27.	Individual	Brent Ingebrigtsen	E.ON U.S.	X		X		X	X					
28.	Individual	Martin Bauer	US Bureau of Reclamation					X					X	
29.	Individual	Greg Rowland	Duke Energy	X		X		X	X					
30.	Individual	Daniel J. Hansen	RRI Energy			X								
31.	Individual	Scott Etnoyer, Director NERC Compliance	Constellation Power Source Generation, Inc.			X								

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		Commenter	Organization	Industry Segment										
				1	2	3	4	5	6	7	8	9	10	
32.	Individual	Scott Barfield-McGinnis	Georgia System Operations Corporation			X	X							
33.	Individual	James H. Sorrels, Jr.	AEP	X		X		X	X					
34.	Individual	Angela Battle	Georgia Transmission Corporation	X										
35.	Individual	Catherine Koch	Puget Sound Energy	X										
36.	Individual	Armin Klusman	CenterPoint Energy	X										
37.	Individual	John P. Mayhan	Omaha Public Power District	X		X		X	X					
38.	Individual	Dan Rochester	Independent Electricity System Operator		X									
39.	Individual	Joe Knight	Great River Energy	X		X		X	X					

1. Do you agree that Requirement R1 removes the ambiguity of and simplifies the Generator Owner obligations for generator Facility Ratings?

Summary Consideration: Several commenters suggested revising the parenthetical which said, “location as specified by the Generator Owner” in R1 and R2 for clarity. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements, indicating that the inclusion of the word, “turbine” was confusing. The FR SDT removed the word “turbine” from R1 as well as the parenthetical phrase and revised the requirement to better reflect the intent of R1 and R2. The Intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

Organization	Yes or No	Question 1 Comment
Electric Market Policy	No	<p>1 Requirement R1 - The wording in the parentheses should be revised to read: “consistent with the change in ownership between the Generator and Transmission Owners.” This will ensure there are no gaps between GO and TO owned equipment and reinforces the SDT’s stated view in paragraph 3 on page 2 of 5.</p> <p>2 Requirement R1.1.1 The phrase “an established engineering practice having a successful implementation record” should be replaced, for clarity, with the language used in Requirements R2.1.3 and R3.1.3: A practice that has been verified by testing or engineering analysis.</p> <p>3 Requirement R1.1.2 It is not clear how testing could be used as a means of documentation for determining a Facility Rating. We don’t agree that testing is an appropriate means to rate a facility. It may validate the rating, but then again may prove it wrong (failure). We don’t see similar language in R3 and we assume it’s because the SDT didn’t believe it appropriate to develop transmission ratings through a “test to fail” methodology. Secondly, we disagree because testing will produce a unit capability that will vary season-to-season. Such tests should not be allowed to exceed the facility rating. Also, if a GO modifies the generator to increase its output, we suggest that the Facility Rating</p>

Organization	Yes or No	Question 1 Comment
		methodology should be reviewed in advance of scheduling a performance test.
<p>Response: The FR SDT thanks you for your comment.</p> <p>1 The FR SDT removed the parenthetical phrase and revised the requirement to: R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>2 We have revised the phrase to: “An established engineering practice that has been verified by testing or engineering analysis.”</p> <p>3 We agree that it is inappropriate to “test to fail”, however the requirement does not indicate this. Testing is but one way to satisfy the requirement.</p>		
Calpine Corporation	No	<p>1. The proposed limiting of the R1 to turbine-generator units raises the question as to why R1 should apply only to generators operated by a specific type of prime mover. Any generation source (such as diesel-generators), regardless of technology should be subject to the Facility Rating Standard.</p> <p>2. More importantly, it’s not clear what “Facility Ratings” are required by the proposed Standard. There appears to be significant confusion within the industry as to whether the Standard is proposed to require “capacity ratings” of a generating unit as a whole, or whether its scope is limited to the electrical ratings of the electrical equipment from the generator to the point of interconnection with the grid, as indicated by the current definitions of “Facility Ratings” and “Facility” in the NERC Glossary of Terms. Clarification is needed as to whether the drafting committee’s intent is to require that Facility Ratings be provided that reflect the generating facility’s overall electrical output capacity based on evaluation of the numerous non-electrical systems that comprise a generating facility and that may, depending on numerous variables, be the actual limiting factor of the output of the generation facility at any given time. The Drafting team’s statement could be read to indicate either interpretation: “The intent is to identify any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current, frequency, real, or reactive power flow). If the intent of the proposed Standard is to encompass anything other than the electrical ratings of the equipment from the generator to the point of interconnection. Then a large amount of specific information to delineate the scope of the Requirements in a way that would allow consistent ratings and appropriate enforcement of the Standard would be needed before such a Standard should be submitted.</p>
<p>Response: The FR SDT thanks you for your comment.</p> <p>1 We have removed the word “turbine” from R1.</p> <p>2 The intent is to identify any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current,</p>		

Organization	Yes or No	Question 1 Comment
<p>frequency, real, or reactive power flow). This only includes the electrical facilities.</p>		
<p>NERC Standards Review Subcommittee</p>	<p>No</p>	<p>A. R1 says that the documentation of the facility rating includes everything up to the generator terminals, or low side GSU Transformer terminals, or high side GSU Transformer terminals. This implies, but does not directly state, that all of the equipment behind the generator (e.g. the turbine, boiler, pumps, fans, pulverizers, conveyor belts, etc.) must be given a rating. The MRO NSRS feels the draft standard is more ambiguous in this area than in the current version. The standard should specify that the scope includes only the electrical equipment from the generator out to the point of interconnection. The MRO NSRS strongly feels that it should be limited to the electrical equipment between the generator and the point of interconnection. In addition, rating responsibility should be based on ownership and not the selection of any particular boundary.</p> <p>B. There are many pieces of equipment that are “behind” the generator that ensure MWs and MVARs are available to the interconnection. R1 states all “turbine generator Facilities” shall have documentation to determine its Facility Ratings. This could be construed as all generators are “turbine” driven, except solar. Does this take into consideration the 20 MVA (individual unit) and 75 MVA (plant/ facility) as stated in the NERC Statement of Compliance Criteria?</p> <p>C. MRO NSRS agrees with the concept that each piece of electrical equipment should have a rating and how they are reported will depend on the how the generator owners facilities are modeled in various models. If a step up transformer is modeled separately from the generator, a rating for the step up transformer should be determined individually and reported along with a rating for a generator. However, the MRO NSRS believes that R2 may actually create confusion surrounding the issue of NERC registering Generation Owners as Transmission Owners.</p>
<p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine’ to clarify that the requirement only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		

Organization	Yes or No	Question 1 Comment
E.ON U.S.	No	E.ON U.S. believes that in providing more choice R1 actually adds to the ambiguity. Additionally, E.ON U.S. questions whether this requirement will prompt NERC to reconsider past penalties for entities that had utilized actual performance tests to comply with FAC-008/009.
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>The FR SDT can not address any past penalty or compliance issues.</p>		
Great River Energy	No	GRE appreciates that the standard will allow commissioning data, operational testing and historical performance data to serve as evidence to support its facility rating. Some of the items under 2.2 (ambient, operating limitations) should also apply to the equipment referenced in R1. GRE would like clarification on when Facility Ratings are referring to the turbine generator facilities the standard states that the GO must have documentation for determining these ratings; and when the standard is referring to the ratings of essentially the same facility but from either the generator terminals, low side terminals or high side terminals to the point of interconnection, the documentation for determining these ratings is now called a methodology. Why would it not be a methodology for determining the ratings of the turbine generator facility? It also appears that the GO will now need to have two sets of facility ratings.
<p>Response: The FR SDT thanks you for your comment. The FR SDT contends that ambient and operating limitations are already covered implicitly in engineering analysis. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up</p>		

Organization	Yes or No	Question 1 Comment
<p>transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
<p>Florida Municipal Power Agency, and its Member Cities</p>	<p>No</p>	<p>It is still confusing to FMPA whether, for generators, the SDT intends the standard to apply to determining the electrical rating of the electrical equipment, or whether the SDT intends the standard to apply to determining the capability of the mechanical plant. The NERC Glossary of Terms defines a Rating as: "The operational limits of a transmission system element under a set of specified conditions," and Equipment Rating as: "The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner." The mechanical plant has no "equipment" that is limited by "voltage, current, "real and reactive power flows", but rather the equipment is limited by temperatures, pressures and emissions. The MW capability of the mechanical plant / prime mover is a result of operating to temperature, pressure and emission limits, and is not itself an operational limit; hence, there is no MW "rating" of a prime mover because MW is not the operational limit. So, it seems to FMPA that Facility Ratings are not applicable to the mechanical plant of a generator, but rather, only applicable to the electrical equipment. The only exception to this ought to be the frequency limits (RPM) of the turbine. Another question to ask oneself is: how would such a rating be used? For instance, in the summer, utilities typically use a summer rating to allow operators to operate within those ratings. Is the SDT suggesting that a MW rating of the prime mover would be created and operators would limit the output of the plant to that rating? That seems inappropriate since generator operators limit the output of the plant not by MWs, but by temperatures, pressures and emissions, and MW output can change from hour to hour depending on operating conditions. If it is for modeling in a summer peak load flow case, then it is really capability at a specific ambient temperature, specific fuel source, etc. that is desired, and is better handled in MOD-024 because that is not the rating of the facility. FMPA proposes that the Facility Rating of the generator ought to just consider electrical equipment (and the frequency limit of the turbine). Such a rating is a true "operational limit" to the capability of prime mover at any moment in time, such as are temperature, pressure and emission limits.</p>
<p>Response: The FR SDT thanks you for your comment. We have removed the word "turbine" to clarify that the requirement only applies to electrical facilities.</p>		
<p>Ontario Power</p>	<p>No</p>	<p>Our response to this question would be YES/NO but check boxes do not allow that. The SDT is</p>

Organization	Yes or No	Question 1 Comment
Generation		<p>commended for making a significant step in the right direction and changing the focus of the standard from “Documented Methodologies” towards actual documentation that supports the development of Facility Ratings. Nevertheless, R1 is still burdened with an ambiguous notion of what constitutes a “Generation Facility”. For example, term “turbine-generator” may be interpreted to exclude hydro-generators. In addition, wording of R1 attempts to provide more flexibility and specificity regarding “Generation Facility” boundaries but in our view actually creates unnecessary confusion and complexity. Instead, we suggest that the SDT should consider using the term “up to the Point of Interconnection”. Here is the definition for Point of Interconnection. FERC Order 661 refers to Order 2003 for this definition so it is presumably the most current. From FERC Order 2003, APPENDIX C “STANDARD LARGE GENERATOR INTERCONNECTION PROCEDURES (LGIP)” including “STANDARD LARGE GENERATOR INTERCONNECTION AGREEMENT (LGIA)”: Point of Interconnection shall mean the point, as set forth in Appendix A to the Standard Large Generator Interconnection Agreement, where the Interconnection Facilities connect to the Transmission Provider’s Transmission System. By adopting the term “Point of Interconnection”, FAC-008-02 would have the boundaries of “Generating Facilities” clearly set and uniformly applied. This would also eliminate the need for R2. The language of the standard would also become consistent with the language of FAC-001-0 and FAC-002-0 that deal with the subject of Facility Connection requirements and plans.</p>
<p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” to clarify that the requirement only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
Xcel Energy	No	<p>R1 says that the documentation of the facility rating includes everything up to the generator terminals, or low side GSU Transformer terminals, or high side GSU Transformer terminals. This implies, but does not directly state, that all of the equipment behind the generator (e.g. the turbine, boiler, pumps, fans, pulverizers, conveyor belts, etc.) must be given a rating. We feel the draft standard is more ambiguous in this area than in the current version. The standard should specify if</p>

Organization	Yes or No	Question 1 Comment
		<p>its scope includes only the electrical equipment from the generator out to the point of interconnection, or if it also includes the prime mover and all mechanical equipment behind it. We strongly feel that it should be limited to the electrical equipment between the generator and the point of interconnection. In addition, having the GO chose the boundary for the plant facility creates more ambiguity and inconsistency. Rating responsibility should be based on ownership and not the selection of any particular boundary.</p>
<p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1 to clarify that the requirement only applies to electrical facilities and removed the parenthetical that included the language referencing the Generator Owner’s authority to choose the boundary for the plant facility. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
PJM	No	<p>Requirement 1 needs to be removed. Other standards that require verification of real and reactive capability should suffice and this requirement is duplicative of those requirements. Even if you don't believe that MOD-024 and MOD-025 sufficiently cover this requirement, a GO should be able to rate it's generator any way it wants as long as it's consistent with its true capability. No methodology should be required.</p>
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the</p>		

Organization	Yes or No	Question 1 Comment
<p>Transmission Owner that contains all of the following. R1 does not require a methodology and a GO is free to rate its generator any way it wants. That rating has to be documented.</p>		
Constellation Power Source Generation, Inc.	No	See response to Question 6 below.
<p>Response: The FR SDT thanks you for your comment. Please see response to Q6 below.</p>		
Ameren	No	The demarcation point should be the point of interconnection with the transmission system. For example, windfarms may have a 10 mile lead line that should also be included in their facilities.
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>R2 applies to the 10 mile lead line that you mention.</p>		
RRI Energy	No	The requirement is improved, but on the whole, the standard requirements (and accompanying obligations) place equal or more burden upon generator owners for the predicable operation of radial connected facilities, than those imposed upon networked components of the transmission system, where the need for facility ratings is crucial for the ever changing operating conditions of the transmission system.
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. R2 and R3 are equivalent requirements that apply to different entities.</p>		
SPS Energy	No	The standard is flawed in its very purpose in that calculated, or "backed into" generator ratings as described in R1.1.1 should never be used in the operation horizon for the reliable operation of the

Organization	Yes or No	Question 1 Comment
		<p>BES. Using the backed into ratings for planning is less dangerous but equally useless since real ratings are readily available. The OPERATION of the BES should make use of the current capability information provided by IRO-004-1 R4, TOP-00202 R13&15, and TOP-003-0</p> <p>R1. 1.2 "capable of demonstrating consistency..." is ambiguous. Performance testing and periodic capability tests will embody any applicable equipment rating, including the most limiting. 1.2 is a non-sensical statement and should be removed.</p>
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to provide documentation on generator facility ratings for planning (hence the “long-term planning: time horizon.) The day-to-day capability information in the other standards that you mention are real-time standards.</p> <p>We have revised Requirement R1, Part 1.2 to: “The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.”</p>		
Arizona Public Service Co.	No	<p>The term “Facility Rating” in R1 is still vague. It is still not clear whether it includes auxiliaries or not. If the turbine generator rating is of interest, it should simply say so. There are also additional issues that are not touched on with this rating requirement where the rating is not limited by the turbine generator or a component but by regulatory environmental issues.</p>
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>Requirement R2, Part 2.2.4 and Requirement R3, Part R3.2.4 call for the ratings methodology to include “operating limitations” which could include, but is not limited to, regulatory or environmental issues.</p>		
SCE&G	No	<p>The wording in the standard still does not define the boundaries of the equipment to be evaluated in establishing the facility rating. Are we to assume that "the Facility Ratings of its solely and jointly</p>

Organization	Yes or No	Question 1 Comment
		<p>owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer" means all equipment in the primary and secondary systems (for nuclear) and everything from the fuel source (or energy source for hydros) to the generator terminals, etc?</p> <p>Also, it is difficult to interpret in R1.1 whether "contain at least one of the following:" means one of the following elements in each subrequirement or one of the subrequirements as a whole. If the latter was the intent then R1.1 should be clarified to read: "The documentation shall contain design/construction information and/or Operational Information as follows:"</p>
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>We have also removed the word "turbine" from the requirement.</p> <p>Requirement R1, Part 1.1 means to apply either Part 1.1.1 or Part 1.1.2. or both Part 1.1.1 and Part 1.1.2. It is up to the Generator Owner to decide.</p>		
AEP	No	There is additional clarification necessary in regard to whether the requirement references Real (MW) and Reactive (MVAR) Power.
<p>Response: The FR SDT thanks you for your comment. Facility Rating is a defined term: "The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility." The FR SDT does not feel that any further clarification is necessary.</p>		
FirstEnergy	No	We agree that the new requirements R1 and R2 establish separation from traditional generation facilities and non-generator facilities for equipment owned (solely or jointly) by a generator owner. Furthermore, it appears consistent with the approach being recommended in the draft Generator Requirements at the Transmission Interface report which is presently out for industry comment. However, as written requirement R1 (and to a lesser extent R2) could lead to confusion and we

Organization	Yes or No	Question 1 Comment
		believe that improvement is needed. See our comments in Questions 2 through 6 for further details.
Response: The FR SDT thanks you for your comment. Please see our responses to questions 2-6.		
IRC Standards Review Committee	No	We agree with the concept that each piece of electrical equipment should have a rating and how they are reported will depend on the how the generator owners facilities are modeled in various models. If a step up transformer is modeled separately from the generator, a rating for the step up transformer should be determined individually and reported along with a rating for a generator. However, we believe that R2 may actually create confusion surrounding the issue of NERC registering Generation Owners as Transmission Owners. NERC has already assigned this issue to a task team and this drafting team should avoid complicating the issue further.
<p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” to clarify that the requirement only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
Northeast Power Coordinating Council	No	We disagree with the proposal in Requirement R1 that the selection of the point of demarcation between the Generator Owner and Transmission Owner be left up to the Generator Owner. Requirement R1 reads: R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner). (Highlighting added). NERC should leave this up to the Generator Owners and Transmission Owners to establish jointly, more specifically to decide the “boundary”, because each situation is different in the way assets are divided up, and the ownership line drawn.
Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have removed the parenthetical phrase in R1 that included the language referencing the Generator Owner’s		

Organization	Yes or No	Question 1 Comment
<p>authority to choose the boundary for the plant facility. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p>		
RRI Energy Inc	No	<p>We do not feel that this standard should be applied to a generator. This standard clearly should be applied to transmission elements that transmit power and whose rating can be influence by other transmission elements both upstream and down stream of the element being rated. This is a key difference between the generator ratings and transmission system equipment ratings is that the generator only sees operating values that are under the operator’s direct control. The generator cannot operate above where the operator tells it to. The transmission system, however, sees operating conditions that are influenced and impacted by so many outside forces that the transmission operator is in a reactionary mode to try to control loadings on elements in the system. Another difference is that if the generator overloads some element in its facility, the maximum impact to the system is that the generator trips. This is no different an outcome to the transmission system than if the generator tripped for any other reason. A loss of transmission system elements, however, can lead to other issues and in the worst case result in cascading and system separations or blackouts.</p>
<p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p>		
Bonneville Power Administration	Yes	
Duke Energy	Yes	
Georgia Transmission Corporation	Yes	

Organization	Yes or No	Question 1 Comment
Independent Electricity System Operator	Yes	
Manitoba Hydro	Yes	
NextEra Energy Resources	Yes	
Pacific Gas and Electric Co.	Yes	
PacifiCorp	Yes	
Pepco Holdings, Inc. - Affiliates	Yes	
Self-retired	Yes	
SERC Planning Standards Subcommittee	Yes	
Southern Company	Yes	
Georgia System Operations Corporation	Yes	Gives the Generator Owner choice of methodology.
Response: The FR SDT thanks you for your comment.		
Dynergy Inc.	Yes	R1 needs a comma after the word "terminals" so that it is clear that the GO has three location options to specify.
Response: The FR SDT thanks you for your comment. Based on other comments, the FR SDT has made some clarifying modifications to R1 and the additional comma proposed is no longer needed. The modifications made to R2 clarify that the intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical		

Organization	Yes or No	Question 1 Comment
<p>equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
US Bureau of Reclamation	Yes	<p>The text removed the ambiguity in what was to be included; however, the term “turbine” created a problem in the reference to “Turbine-Generators”. To start with, this would only apply to generators that have a turbine as prime mover. Photovoltaic or other non rotary sources would be excluded. This term could be construed as eliminating the power output rating of the turbine and only requiring the generator itself. To remove the potential problem with the use of this term, it is suggested that the section be rewritten as: “Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned power train equipment up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner):”</p>
<p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1.</p>		
Puget Sound Energy	Yes	<p>We understand R1 to be pertinent to the generating turbines up to the GSU transformer. R1 is utilized when the GO is the same entity as the TO. Please confirm we’ve interpreted this correctly.</p>
<p>Response: The FR SDT thanks you for your comment. The FR SDT does not believe that you have interpreted this correctly. We have revised R1 and R2 to clarify the intent. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		

Organization	Yes or No	Question 1 Comment

2. Do you agree that Requirement R1 allows more latitude for the Generator Owner in how he supports the technical basis for his generator Facility Ratings?

Summary Consideration: Most stakeholders agree that R1 allows more latitude for the Generator Owner in how it supports the technical basis for its generator Facility Ratings. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements. Two stakeholders suggested that the standard should not apply to Generator Owners and that MOD standards more appropriately address the need for generator ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for establishing generator facility ratings because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.

The FR SDT removed the word “turbine” from R1 as well as the parenthetical phrase which said, “location as specified by the Generator Owner” and revised the requirement to better reflect the intent of R1 and R2. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

Organization	Yes or No	Question 2 Comment
Calpine Corporation	No	A clear statement of which equipment is to be rated (the electrical equipment from the generator to the point of interconnection) is needed. If the intent is to require that ratings be required based on anything other than the nameplate or calculated limits of the electrical equipment comprising the generating facility, such intent needs to be clearly stated in the Standard.
<p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical</p>		

Organization	Yes or No	Question 2 Comment
<p>equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
SPS Energy	No	Latitude cannot be confused with wider ambiguity. It remains unclear how a backed-into calculation can possibly be superior to actual operational data.
<p>Response: The FR SDT thanks you for your comment. The FR SDT does not contend that it is. If a Generator Owner wished to use operational data to document its Facility Rating, that is perfectly acceptable under the requirements (see specifically Requirement R1, Part 1.1, second bullet Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.)</p>		
Constellation Power Source Generation, Inc.	No	See response to Question 6 below.
<p>Response: The FR SDT thanks you for your comment. Please see responses to question 6 comments.</p>		
NERC Standards Review Subcommittee	No	Some of the sub-requirements have been shifted between R1 and R2, but there appears to be no substantial difference in what is ultimately required of the GO.
Xcel Energy	No	Some of the sub-requirements have been shifted between R1 and R2, but there appears to be no substantial difference in what is ultimately required of the GO.
<p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p>		

Organization	Yes or No	Question 2 Comment
<p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
PJM	No	The requirements of MOD-024 and MOD-025 for validation should be the only basis for rating generators.
<p>Response: The FR SDT thanks you for your comment. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for establishing generator facility ratings because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p>		
RRI Energy Inc	No	<p>We do not believe that this standard should be applicable to generators. Every unit is designed with the over sight of a responsible AE that has to hold proper credentials such as ASME boiler certification and must follow a host of regulations. They also must employ PE's that must sign off on the design. The unit must apply for an IA with it's TO so that the TO can do an impact study. The generator must comply with all the requirements mandated by the TO in order to get an IA. The generator will conduct unit commercial tests to insure that unit is capable of the output specified in the unit design contract. Once commercial the output of the generator is continuously monitored by the TOP/RC. This is also true if the generator decides to up grade the unit. It must follow the same path that it did when it built the unit. There can not be any surprises. In addition there are standards and market protocols that require a generator to communicate unit capabilities to the RC/BA or TOP. Most notably in TOP-002-2a requirement R3: Generator Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal operations with its Host Balancing Authority and Transmission Service Provider. Also in IRO-005 measure 9: The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1) In order for the RC to comply it will have to get unit capabilities from the generator. Note that this requires the generator to report actual capabilities not a calculated number based on a rating methodology. In areas where there are organized markets a generator must offer the unit to the market operator indicating what the unit is capable of producing for the next day market. Market rules require the</p>

Organization	Yes or No	Question 2 Comment
		generator to immediately report any unit de-rates.
<p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning. The process / documentation that you mention above is an acceptable method to meet R1 and R2.</p>		
AEP	Yes	
Bonneville Power Administration	Yes	
Duke Energy	Yes	
E.ON U.S.	Yes	
Electric Market Policy	Yes	
Florida Municipal Power Agency, and its Member Cities	Yes	
Georgia Transmission Corporation	Yes	
Independent Electricity System Operator	Yes	
IRC Standards Review Committee	Yes	
Manitoba Hydro	Yes	
NextEra Energy Resources	Yes	

Organization	Yes or No	Question 2 Comment
Northeast Power Coordinating Council	Yes	
Ontario Power Generation	Yes	
Pacific Gas and Electric Co.	Yes	
PacifiCorp	Yes	
Pepco Holdings, Inc. - Affiliates	Yes	
Puget Sound Energy	Yes	
RRI Energy	Yes	
SCE&G	Yes	
Self-retired	Yes	
SERC Planning Standards Subcommittee	Yes	
Southern Company	Yes	
US Bureau of Reclamation	Yes	
Arizona Public Service Co.	Yes	But should also explicitly allow for the regulatory environmental constraints which may be long term vs. the identified short term derate as indicated by operational limitations.
Response: The FR SDT thanks you for your comment. The items that you mention are covered in Requirement R2, Part 2.2.4 and		

Organization	Yes or No	Question 2 Comment
Requirement R3, Part 3.2.4 – “Operational Limitations”		
Dynergy Inc.	Yes	However, the wording "do not exceed" in R1.2 needs to be replaced by "corresponds to". This is a critical wording change. The new suggested wording is required or the "black box" concept discussed in the Background Section is no longer valid.
Response: The FR SDT thanks you for your comment. The point of Requirement R1, Part 1.2 is to makes sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not “correspond to”.		
Ameren	Yes	It does provide options.
Response: The FR SDT thanks you for your comment.		
Georgia System Operations Corporation	Yes	None.
Great River Energy	Yes	R1 appears to be giving more latitude for meeting compliance.
Response: The FR SDT thanks you for your comment.		
FirstEnergy	Yes	While R1 provides more latitude, it could lead to unintentional problems. As written, it appears that the generator owner can unilaterally choose the boundary of the generator facilities that may not align with agreements. We suggest that the requirement be re-written to require the generator owner simply rate all BES facilities that they own up to the point of their transmission interconnection with the host transmission owner. This boundary should be well understood via contracts or agreements between the two parties.
<p>Response: The FR SDT thanks you for your comment. We have removed the parenthetical phrase which said, “location as specified by the Generator Owner.” The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology)</p>		

Organization	Yes or No	Question 2 Comment
of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:		

3. Do you agree that the ‘black-box’ approach (please refer to the background material above) for providing generating unit Facility Ratings provides the Facility ratings that can be “...used in the reliable planning and operation of the Bulk Electric System...?”

Summary Consideration: Several commenters suggested that the black box approach led to more confusion for the requirements rather than clarifying them as the FR SDT intended. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

Organization	Yes or No	Question 3 Comment
NERC Standards Review Subcommittee	No	<p>A. The location of the boundary of the Facility (“black-box”) has no bearing on the reliability of the rating.</p> <p>B. MRO NSRS believes some of the confusion surrounding the ratings that generators must provide hinges on misunderstanding their intended use. For example, in MOD-024 (MWs) and to some extent MOD-025 (reactive capability), an owner is determining net dependable capability (derived from Regional guides presently and previously) and a black box approach is appropriate. These capabilities (ratings) are primarily for adequacy determination, not specific model interactions. However, ratings in FAC-008 are intended to be used in transmission models and a black box approach may not be appropriate if there are multiple circuits within the black box.</p> <p>C. Is the black-box approach intended to address instances with distributed generation (e.g. diesels and wind farms) where generators are aggregated through one breaker?</p>

Organization	Yes or No	Question 3 Comment
<p>Response: The FR SDT thanks you for your comment.</p> <p>A/B. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>C. yes</p>		
Florida Municipal Power Agency, and its Member Cities	No	Not needed if the Facility Rating only applies to electrical equipment
<p>Response: The FR SDT thanks you for your comment.</p>		
PJM	No	R1 still requires ...documentation for determining the facility ratings... That's not a black box approach. R1.1 requires further details that also diverge from a black box approach.
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		

Organization	Yes or No	Question 3 Comment
SPS Energy	No	See answer to Question 2.
<p>Response: The FR SDT thanks you for your comment. Please see response to Question 2.</p>		
Constellation Power Source Generation, Inc.	No	See response to Question 6 below.
<p>Response: The FR SDT thanks you for your comment. Please see response to Question 6.</p>		
RRI Energy Inc	No	See the comments to Question 2 and 3.
<p>Response: The FR SDT thanks you for your comment. Please see response to Question 2 and Question 3.</p>		
Xcel Energy	No	The location of the boundary of the Facility (“black-box”) has no bearing on the reliability of the rating.
<p>Response: The FR SDT thanks you for your comment. The boundary is defined by the ownership of the Facility. The black box approach is designed to provide latitude in determining the Facility Ratings for generation facilities. R4 and R5 provide for “peer review” of the ratings to ensure the reliability of the rating.</p>		
Calpine Corporation	No	There is no benefit to evaluating the generation facility as a “Black Box”. Ratings of the electrical equipment from the generator to the point of interconnect should be evaluated and the most limiting element based on their electrical characteristics should provide the basis for the electrical rating of the facility. FAC-00802 should not be interpreted to require any non-electrical equipment ratings.
<p>Response: The FR SDT thanks you for your comment. The FR SDT agrees with your comments. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have deleted the word, “turbine” from R1 and revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings</p>		

Organization	Yes or No	Question 3 Comment
<p>methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p>		
Ameren	No	<p>Typically the Generator facilities are not part of the BES so it is not clear how these ratings would impact reliability planning.</p>
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator rating (as defined by the Generator Owner) and R2 includes the documentation of electrical equipment rating from the generator to the point of interconnection. The ratings are used in planning studies.</p>		
IRC Standards Review Committee	No	<p>We believe some of the confusion surrounding the ratings that generators must provide hinges on misunderstanding their intended use. For example, in MOD-024 (MWs) and to some extent MOD-025 (reactive capability), an owner is determining net dependable capability (derived from Regional guides presently and previously) and a black box approach is appropriate. These capabilities (ratings) are primarily for adequacy determination, not specific model interactions. However, ratings in FAC-008 are intended to be used in transmission models and a black box approach is not appropriate.</p>
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
FirstEnergy	No	<p>We do not agree with this approach because the intent of this standard is not clear with regard to the traditional generator facilities. Is the intent of this standard to ensure that electrical infrastructure owned by the generator owner is sufficiently sized to handle the maximum generation output, or is it to provide a generator rating for use in planning and operations? If it is the latter, the rating that is established may be overstated and not proper for use in planning and operations models, if the rating is based solely on electrical parameters.</p>

Organization	Yes or No	Question 3 Comment
		<p>In R1, there is no consideration for operating limits that may occur due to mechanical limitations (i.e tube leak). The SDT should consider adding to R1 a similar requirement as stated in sub-part 2.2.4 of requirement R2 with regard to operating limitations. This issue could be a problem for an entity that would choose sub-part 1.1.1 over sub-part 1.1.2 in their facility rating determination. For an entity that chooses sub-part 1.1.2 of R1, it is not clear how sub-part 1.2 would be satisfied.</p> <p>The inclusion of 1.2 seems to force an entity to use 1.1.1. To resolve this, we suggest that a minimum timeframe for consecutive operating hours during testing or operational tracking be established that when used in 1.1.2 would also be understood to meet sub-part 1.2. Lastly, sub-part 1.1.2 is lacking in that the item says that operational information "may" be supplemented by engineering analysis. FE suggests that R1 should also mirror sub-parts 2.2.1 through 2.2.3 of requirement R2 to account for engineering analysis that should be required or expected.</p>
<p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine’ to clarify that the requirement only applies to electrical facilities and not items such as tube leaks. The time horizon for R1 is long term planning, not real-time operations. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>We have also revised Requirement R1, Part 1.2 to address your concern:</p> <p style="padding-left: 40px;">The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p>		
AEP	Yes	
Arizona Public Service Co.	Yes	

Organization	Yes or No	Question 3 Comment
Bonneville Power Administration	Yes	
Duke Energy	Yes	
Dynergy Inc.	Yes	
E.ON U.S.	Yes	
Georgia Transmission Corporation	Yes	
Independent Electricity System Operator	Yes	
Manitoba Hydro	Yes	
NextEra Energy Resources	Yes	
Northeast Power Coordinating Council	Yes	
Ontario Power Generation	Yes	
Pacific Gas and Electric Co.	Yes	
PacifiCorp	Yes	
Pepco Holdings, Inc.	Yes	

Organization	Yes or No	Question 3 Comment
- Affiliates		
Puget Sound Energy	Yes	
Self-retired	Yes	
SERC Planning Standards Subcommittee	Yes	
Southern Company	Yes	
US Bureau of Reclamation	Yes	
Georgia System Operations Corporation	Yes	Allows definition of the “Boundaries” of the plant (“Black-box”).
Response: The FR SDT thanks you for your comment.		
Electric Market Policy	Yes	As noted in the background material in paragraph 3 on page 2 of 5, this approach allows latitude for the Generator Owner to define the “boundary” of the generating unit Facility (“black-box”) as either the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer “presumably chosen by the Generator Owner to be consistent with the change in ownership point between the Generator and Transmission Owners.”
Response: The FR SDT thanks you for your comment.		
SCE&G	Yes	The boundaries of the blackbox must be clearly defined
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned</p>		

Organization	Yes or No	Question 3 Comment
		<p>generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>

4. Do you agree that the selection of “generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer” in Requirement R1 provides sufficient latitude to the Generator Owner? If not, provide please suggest other or additional locations.

Summary Consideration: Several stakeholders suggested better clarity to the requirements was needed. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

Organization	Yes or No	Question 4 Comment
Electric Market Policy	No	As noted in Question 1, Requirement 1 should be expanded to include: “consistent with the change in ownership between the Generator and Transmission Owners.”
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		

Organization	Yes or No	Question 4 Comment
E.ON U.S.	No	E.ON U.S. believes that this requirement is adequately addressed by R1 and therefore redundant
<p>Response: The FR SDT thanks you for your comment. We have revised R1 and R2 to provide clarity.</p>		
Florida Municipal Power Agency, and its Member Cities	No	If Facility Ratings only apply to electrical equipment of a power plant, then the “black box” is not needed, and the various boundaries to the “black box” are not needed.
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator rating (as defined by the Generator Owner) and R2 includes the documentation of electrical equipment rating from the generator to the point of interconnection.</p>		
Ameren	No	It seems there should be a common point of demarcation. It is not clear what the justification would be for selecting one point over another. It seems that common point should be the Point of Interconnection with the transmission system.
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
Ontario Power Generation	No	Please see the response to Q1.
<p>Response: The FR SDT thanks you for your comment. Please see response to Q1.</p>		
FirstEnergy	No	See our comments in Question 2.

Organization	Yes or No	Question 4 Comment
Response: The FR SDT thanks you for your comment. Please see response to Q2.		
RRI Energy Inc	No	See the comments to Question 2 and 3.
Response: The FR SDT thanks you for your comment. Please see response to Q2 and Q3.		
SPS Energy	No	See answer to Question 2.
Response: The FR SDT thanks you for your comment. Please see response to Q2.		
Northeast Power Coordinating Council	No	The rating of the generator should be at the generator terminals, with the requirement that the unit service load (if drawn between the generator terminals and the low side of the generator step-up transformer) and the generator step-up transformer impedances are explicitly shown. If measured at the high side of the generator step-up transformer, the rating is a net output rating that may not reflect the physical limits and characteristics of the generator, unit service load, and transformer losses.
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
Independent Electricity System Operator	No	We believe the expansion of this standard to now have R1 and R2 applicable to the Generator Owner is to ensure: a. It has documentation on the rating of that part of equipment associated with the generating unit, and, b. It has a documented methodology to determine the facilities between its generating unit and the interconnection point with the Transmission Owner. We believe the determination of the rating for step-up transformers should be covered by R2, not R1. By including “or the high side terminal of the step up transformer” in R1 allows the GO to use documented information as opposed to a determination methodology and be spared from having to provide the

Organization	Yes or No	Question 4 Comment
		methodology basis, assumptions, design criteria, etc. stipulated in R2.1 and R2.2. Beside, this will make a part of R2.4 (which includes transformers) not relevant.
IRC Standards Review Committee	No	We believe the expansion of this standard to now have R1 and R2 applicable to the Generator Owner is to ensure that: a. It has documentation on the rating of that part of equipment associated with the generating unit (R1), and, b. It has a documented methodology to determine the facilities between its generating unit and the interconnection point with the Transmission Owner (R2). We believe the determination of the rating for step-up transformers should be covered by R2, not R1. By including “or the high side terminal of the step up transformer” in R1 allows the GO to use documented information as opposed to a determination methodology and be spared from having to provide the methodology basis, assumptions, design criteria, etc. stipulated in R2.1 and R2.2. Beside, this will make a part of R2.4 (which includes transformers) not relevant.
<p>Response: The FR SDT thanks you for your comment. It can be covered in either requirement, depending on ownership. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
AEP	Yes	
Arizona Public Service Co.	Yes	
Bonneville Power Administration	Yes	
Duke Energy	Yes	
Georgia	Yes	

Organization	Yes or No	Question 4 Comment
Transmission Corporation		
Great River Energy	Yes	
Manitoba Hydro	Yes	
NERC Standards Review Subcommittee	Yes	
Pacific Gas and Electric Co.	Yes	
PacifiCorp	Yes	
Pepco Holdings, Inc. - Affiliates	Yes	
PJM	Yes	
Puget Sound Energy	Yes	
SCE&G	Yes	
Self-retired	Yes	
SERC Planning Standards Subcommittee	Yes	
Southern Company	Yes	
US Bureau of	Yes	

Organization	Yes or No	Question 4 Comment
Reclamation		
Georgia System Operations Corporation	Yes	Allows for different ownership points.
Response: The FR SDT thanks you for your comment.		
NextEra Energy Resources	Yes	For clarification, NextEra Energy Resources (NextEra) would like to see the designation of “step up transformer” changed to “main step up transformer”. Wind turbine generator facilities have multiple step up transformers in the electrical system from a single generator to the point of interconnection. There is a small low voltage step up transformer at each wind turbine and there is a large high voltage main step up transformer which steps the voltage from all the wind turbines at the site voltage up to the transmission voltage level. At an individual wind turbine site, there may be >200 of the smaller step up transformers at the individual wind turbines which all connect to the larger main step up transformer. Wind turbine sites are an intermittent generating asset and the site load is not normally dispatchable. The individual generators are usually not dispatched, but the entire site is operated as a single generating asset. Our method is to rate the entire site as a single generator Facility with the black box boundary at the main step up transformer. By including this additional terminology, it would allow sites with multiple step up transformers in there electrical energy delivery system the latitude to identify the appropriate black box boundary for the generator Facility.
Response: The FR SDT thanks you for your comment. We concur with your suggested revision and have changed R1 to: R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.		
Dynergy Inc.	Yes	See Comment on response to Question #1. R1 needs a comma after the word "terminals" so that it is clear that the GO has three location options to specify.
Response: The FR SDT thanks you for your comment. Please see response to Q1. R1 was revised and obviated the need for the comma.		
Constellation Power Source	Yes	See response to Question 6 below.

Organization	Yes or No	Question 4 Comment
Generation, Inc.		
Response: The FR SDT thanks you for your comment. Please see response to Q6.		
Calpine Corporation	Yes	These points of interconnection are reasonable “cut points” for a generating unit’s rating of electrical equipment.
Response: The FR SDT thanks you for your comment.		
Xcel Energy	Yes	Xcel Energy did not see this as an issue (we have always used the high side of the GSU Transformer as the boundary in the past).
Response: The FR SDT thanks you for your comment.		

5. Do you agree that Requirement R2 properly addresses the rating responsibilities of generator owned Facilities outside the ‘black box’ that are not addressed (or not able to be addressed) in Requirement R1?

Summary Consideration: Several stakeholders suggested that Requirement 2 should address both Normal and Emergency Ratings, consistent with Requirement 3. We have revised Requirement R2, Part 2.4.2 to “The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.”

Still other stakeholders suggested that more clarity for R2 was needed. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection.

We have revised R2 to:

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

Organization	Yes or No	Question 5 Comment
Ameren		: It is difficult to provide a comment when you cannot interpret the question. R1 is about documentation and R2 is about the methodology. The Documentation should support the methodology.
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		

Organization	Yes or No	Question 5 Comment
Dynergy Inc.	No	<p>1. Section 2.2.3 needs to be eliminated. Conductor temperature rather than ambient conditions are typically considered when establishing equipment ratings.</p> <p>2. The footnote to Section 2.2.4 should be eliminated. It is not practical to develop ratings that take into account the myriad of conditions that could result in "temporary de-ratings" of equipment. In addition, such "temporary de-rating" values would not be used in planning or operational studies.</p> <p>3. The word "respect" in section R2.3 should be changed to "corresponds to".</p>
<p>Response: The FR SDT thanks you for your comment.</p> <ol style="list-style-type: none"> Ambient Conditions are part of the underlying assumptions, however this was included in the standard at stakeholder request as a result of a Blackout Recommendation in a prior version of the SAR. Temporary deratings can be used in operational studies. The standard only requires documenting how the methodology considers temporary equipment impairment. An example could be the loss of coolers on a transformer. The point of Requirement R2, Part 2.3 is to make sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not "correspond to". 		
SPS Energy	No	<p>Assume 2.1.3 is a performance test</p> <p>2.2.3 This is unclear and should be revised. Ambient conditions for gas turbine powered generators are represented by an infinite number of points on a curve that plots temperature and humidity. How many of these would comprise an "average"</p> <p>2.3 Should be deleted. It does not contribute to reliability.</p> <p>2.4 Should be split into transmission equipment and generator equipment. There is no need to perpetuate the confusion of the industry in attempting to sort out the NA from the applicable pieces of equipment that apply to Transmission Owners or Generator Owners. 2.4 Is the implication that only electrical equipment is to be considered limiting elements true? What about turbines, gearboxes, cooling systems, scrubber systems, fuel systems, etc? Also, R1 states that the Generator Owner has the option of choosing a scope for its facility that excludes the GSU. This is inconsistent with 2.4 that says transformers shall be included in the scope. Need to pick a direction.</p>
<p>Response: The FR SDT thanks you for your comment. We have removed the word "turbine" to clarify that Requirement R1 only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have</p>		

Organization	Yes or No	Question 5 Comment
<p>revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p> <p>Requirement 2, Part 2.3 specifies that a “Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility”. The FR SDT believes that analyzing all components of a facility is important to developing a rating for that facility and respecting the most limiting component is necessary for reliable ratings.</p> <p>Requirement R2, Part 2.4 deals with items NOT covered in R1. Having “transformers” shown in Requirement R2, Part 2.4 does not include the GSU.</p>		
AEP	No	Facility Ratings Methodology (FRM) is not a defined NERC term and should, therefore, be defined.
<p>Response: The FR SDT thanks you for your comment. We have changed “Methodology” to “methodology”.</p>		
Ontario Power Generation	No	R2 is largely redundant as it may apply only to some rare ownership arrangements, few and far between. In our view there is little value in burdening the standard with such a complex set of requirements only to address few odd cases.
<p>Response: The FR SDT thanks you for your comment. As you suggest R2 may only apply in some cases. It is therefore necessary to have R2 to prevent “gaps”.</p>		
Calpine Corporation	No	R2 properly addresses appropriate ways all electrical components from the generator to the point of interconnection should be rated, which should be the entire scope of the Standard.
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up</p>		

Organization	Yes or No	Question 5 Comment
<p>transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
RRI Energy	No	R2.2 documentation requirements are excessive and unjustifiable for the application of existing facilities that may have successfully and reliably operated for decades without the specific details formally documented on this level.
<p>Response: The FR SDT thanks you for your comment. The FR SDT and the majority of industry commenters do not share your assertion that Requirement R2, Part 2.2 documentation is excessive.</p>		
Electric Market Policy	No	Requirement 2 should address both Normal and Emergency Ratings, consistent with Requirement 3.
<p>Response: The FR SDT thanks you for your comment. We have revised Requirement R2, Part 2.4.2 to “The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.”</p>		
Constellation Power Source Generation, Inc.	No	See response to Question 6 below.
<p>Response: The FR SDT thanks you for your comment. Please see response to Q6.</p>		
Puget Sound Energy	No	We believe that Point of Interconnection is not the correct point of demarcation for R2. Point of Ownership seems more appropriate as R2 seems as if it would be utilized by a GO that is not the same as the TO. Point of interconnection is not the same as point of ownership and therefore could imply a GO must determine ratings for transmission facilities between point of ownership and point of interconnection that it doesn't own.
<p>Response: The FR SDT thanks you for your comment. We revised R2 to:</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
Arizona Public	Yes	

Organization	Yes or No	Question 5 Comment
Service Co.		
Bonneville Power Administration	Yes	
Duke Energy	Yes	
FirstEnergy	Yes	
Florida Municipal Power Agency, and its Member Cities	Yes	
Georgia Transmission Corporation	Yes	
Independent Electricity System Operator	Yes	
Manitoba Hydro	Yes	
NERC Standards Review Subcommittee	Yes	
Northeast Power Coordinating Council	Yes	
Pacific Gas and Electric Co.	Yes	
PacifiCorp	Yes	

Organization	Yes or No	Question 5 Comment
Pepco Holdings, Inc. - Affiliates	Yes	
PJM	Yes	
SCE&G	Yes	
Self-retired	Yes	
SERC Planning Standards Subcommittee	Yes	
Southern Company	Yes	
US Bureau of Reclamation	Yes	
Xcel Energy	Yes	
NextEra Energy Resources	Yes	For clarification, NextEra would like to see the words “the point of interconnection” changed to “the point of interconnection or change in ownership”. We have some sites where the point of interconnection is defined separately from the point on change in ownership. Although it may be implied that the point of interconnection is actually a point of change in ownership, we think the clarification is warranted.
<p>Response: The FR SDT thanks you for your comment. We revised R2 to:</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>		
Great River Energy	Yes	GRE agrees that the GO must now have two sets of facility ratings.
<p>Response: The FR SDT thanks you for your comment.</p>		

Organization	Yes or No	Question 5 Comment
IRC Standards Review Committee	Yes	However, it is not clear that it is necessary. Shouldn't a Generation Owner that owns transmission equipment on the high side of the generation step up transformer be registered as a Transmission Owner?
<p>Response: The FR SDT thanks you for your comment. The FR SDT can not address registration issues and we refer you to the NERC documents on registration.</p>		
Georgia System Operations Corporation	Yes	Seems general enough with responsibility on the Generator Owner to fully include all such facilities.
<p>Response: The FR SDT thanks you for your comment.</p>		

6. If you have any other comments on this standard that you have not already submitted above, please provide them here.

Summary Consideration: Several stakeholders pointed out that there are 2 sets of VSLs for R3. The first set is for R3 and the second set is for R4. The FR SDT corrected this error.

Other stakeholders suggested revising Requirement R2, Part 2.3 to change the word “respect” to “reflect” or “corresponds to”. The FR SDT disagrees because the intent of Requirement R1, Part 1.2 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons. Similar comments were received regarding Requirement R3, Part 3.3.

Several commenters suggested revisions to the VSLs. The FR SDT agreed and made the suggested revisions unless they were no longer applicable due to revisions to the requirement. It was also suggested that Requirement R7 should include Transmission Owner(s). The FR SDT agrees and has made the revision.

One commenter noted the following: *We note that the consideration of comments to the August comments stated that “The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to “Lower”. “ However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs.*

The FR SDT revised the VRF’s to lower for R1 and R2.

Organization	Question 6 Comment
Independent Electricity System Operator	(1) R1.1.2: The phrase “any of which may be supplemented by engineering analyses” does not seem appropriate in a standard requirement as it is not required nor measurable. We suggest this be deleted. (2) There are 2 sets of VSLs for R3. We believe the second R3 should read R4.
<p>Response: The FR SDT thanks you for your comment.</p> <p>1) We disagree. Removal of the phrase will not allow the flexibility of using engineering analysis for compliance with the requirement.</p> <p>2) We concur and have made the suggested revision.</p>	
Electric Market Policy	1. Applicability - The bullets should be removed and the format should be consistent with the rest of the Standard.
<p>Response: The FR SDT thanks you for your comment. Agreed. This change has been made in the revised standard.</p>	

Organization	Question 6 Comment
Duke Energy	<ol style="list-style-type: none"> 1. The Background Information statement on the Comment Form describing the “black box” approach generally makes sense. But the references to other equipment limiting generator voltage rating or thermal output are confusing. Also the Implementation Plan should clearly reflect use of the “black box” approach. 2. Requirement R2.3 - change the word “respect” to “reflect”. 3. Requirement R2.4 Delete this requirement because the scope is already established in R2. Importantly, R2.4 could be interpreted to require an entity to provide a master checklist of every kind of device imaginable in order to prove that the scope of equipment addresses everything postulated by the phrase “shall include, but not limited to”. 4. The bulleting format under R3 is mangled. R3.1.3 should be “A practice that has been verified by testing or engineering analysis.” 5. R3.3 - change the word “respect” to “reflect”. Also strike the phrase “The process by which the Rating of equipment that comprises a Facility is determined.” because this IS your Rating Methodology. 6. R3.4 “ Strike the phrase “The scope of equipment addressed shall include, but not be limited to, transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.” because the scope is already established in R3. 7. R3.4.2 should become the new R3.4 8. Measures “ Change 2.4 to 2.3 under M2. Delete “3” under M4. Delete “4” under M5. 9. R1 VSLs Delete the Moderate VSL, because if your documentation doesn’t contain either 1.1.1 or 1.1.2 this is the same as not having documentation, which is the Severe VSL. 10. R2 VSLs In all four VSLs, 2.1.1 through 2.1.3 should be replaced with just 2.1, because 2.1 says your methodology must be consistent with at least ONE of the following (i.e. 2.1.1, 2.1.2 or 2.1.3). Under the High VSL, reword the phrase “The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4” with this phrase “The Generator Owner’s Facility Rating methodology did not address all of its solely and jointly owned equipment as required by R2.” 11. R3 VSLs In all four VSLs, 3.1.1 through 3.1.3 should be replaced with just 3.1, because 3.1 says your methodology must be consistent with at least ONE of the following (i.e. 3.1.1, 3.1.2, or 3.1.3). Under the High VSL, 3.4.1 and 3.4.2 should be replaced with just 3.4, for consistency with our comment about R3.4 above. 12. R4 VSLs Change R# to R4 from R3 (three places). The wording of all four VSLs should be revised to be consistent with the Requirement (Generator Owners may only have documentation and not a methodology). Moderate VSL insert the phrase “more than” after the word “within” to eliminate the time overlap with the Lower VSL. 13. R7 VSLs The Lower VSL should be eliminated because the requesting entities may request an unreasonable

Organization	Question 6 Comment
	<p>schedule (i.e. instantaneous request). Suggest moving the Moderate VSL to Lower, the High VSL to Moderate, the Severe VSL to High and cap it at 45 days, and create a new Severe VSL for more than 45 days late.</p>
	<p>Response: The FR SDT thanks you for your comment.</p> <ol style="list-style-type: none"> 1. Thank you for your comment. We have revised R1 and R2 for clarity on this issue. 2. The point of Requirement R2, Part 2.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons, so therefore it does not “correspond to”. 3. This corresponds to Requirement R3, Part 3.4 for transmission equipment. Stakeholder consensus indicates that Requirement R2, Part 2.4 should be retained. 4. We have corrected the format. 5. The point of Requirement R3, Part 3.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons, so therefore it does not “reflect”. The phrase that you suggest deleting is actually Requirement 3, Part 3.4 and not a part of Requirement 3, Part 3.3. It is the lead in for Parts 3.4.1 and 3.4.2 and should remain in the standard. 6. Stakeholder consensus indicates that Requirement R3, Part 3.4 should be retained. 7. Requirement R3, Part 3.4 was retained and thus Requirement R3 Part 3.4.2 shall remain. 8. Measures were revised to be consistent with revisions to the requirements. 9. The documentation could include an analysis of the most limiting facilities but not address either Part 1.1.1 or 1.1.2. We will retain the moderate VSL. 10. We revised the VSLs as suggested except for the High VSL. There are now 2 parts for Requirement R2, Part 2.4, so the High VSL is appropriate as written. 11. We revised the VSLs as suggested and to be consistent with the requirement revisions. 12. We revised the VSLs as suggested and to be consistent with the requirement revisions. 13: The FR SDT disagrees with removing the lower VSL.
Dynergy Inc.	<ol style="list-style-type: none"> 1. The word "respect" in Section R3.3 should be changed to "corresponds to". 2. R4 and R5 should require the GO to have both its "documentation" (related to R1) and its Facility Ratings Methodology (relate to R2). 3. All of the wording in the "Background Information" section that refers to the facilities between the high side of the GSU and the Point of Interconnection with the utility that are owned by the GO as "Transmission Facilities" should be

Organization	Question 6 Comment
	<p>removed. NERC has not officially classified these "Generator Interconnection Facilities" as "Transmission Facilities". In addition, the recent recommendations of the GOTO NERC Ad Hoc Task Force state that these types of facilities should not be considered "transmission facilities".</p>
<p>Response: The FR SDT thanks you for your comment.</p> <p>1) The point of Requirement R3, Part 3.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons, so therefore it does not “correspond to”.</p> <p>2) We concur and have made the suggested revisions.</p> <p>3) We have revised R1 and R2 to address your concern. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p>	
FirstEnergy	<p>1. While R7 is similar to language in existing Requirement R2 of FAC-009-0, this requirement is somewhat duplicative of with requirements of MOD-010. Additionally, rather than potentially sending information to four different parties and four different schedules the team should consider a progression of information needed for operations being provided to the TOP and then the TOP updating the RC and for planning the information being provided to the TP and then the TP updating the PC.</p> <p>2. Under section 4 (Applicability), replace bullets with 4.1 and 4.2 for consistency with other standards.</p>
<p>Response: The FR SDT thanks you for your comment.</p> <p>1) The FR SDT believes it is the responsibility of the TO and GO to ensure that those parties that have a need for their ratings actually gets that rating information. Having a chain places the onus on other entities.</p> <p>2) The applicability section of the standard has been changed as suggested.</p>	
NERC Standards Review	<p>A. The MRO NSRS believes the ratings developed in accordance with MOD-024 and MOD-025 are more accurate and appropriate for purposes of modeling, planning and operation. Facility ratings from generator terminal to the interconnection (R2) should be added to MOD-024 and MOD-025, and not included in the scope of FAC-008.</p>

Organization	Question 6 Comment
Subcommittee	<p>Additionally, FAC-008 R1 appears redundant with what is already required per MOD-024 and MOD-025, and should therefore be deleted.</p> <p>B. R.1.1.1 & R1.1.2 should be bulleted. R.1.1 says “The documentation shall contain at least one of the following”. It doesn't say “the documentation shall contain BOTH of the following”. Since compliance is evaluated at the requirement level, and both of these are NOT required, the MRO NSRS feels these subrequirements should be bulleted.</p> <p>C. The MRO NSRS feels the sub-requirements under R2.1 and R3.1 should be bulleted, just as proposed for R1.1, above. The corresponding measures should also be modified to correctly reflect that not “all of the items” in Parts 2.1 and 3.1 have to be included.</p> <p>D. Concerns were previously expressed about documentation of the basis for ratings of older facilities. The MRO NSRS appreciates the drafting team’s response which indicated that this “Standard does not require the recreation of data that is no longer available or no longer accessible for any reason.” However, no modifications were made to the requirements to clarify this. The MRO NSRS feels the standard should be clear about expectations. Since it is not understood how, or if, the drafting team’s responses could be used to clarify the intent of the requirement during an audit, the MRO NSRS feels it is critical that specific language be included. Thus, the MRO NSRS recommends either 1) add a new bullet under 2.1 and 3.1 with language identical to 1.1.2, or 2) modify the 3rd bullet under 2.1 (currently R2.1.3) and 3.1 (currently R3.1.3) with similar clarifying language as 1.1.2.</p> <p>E. The phrase “Ratings of the Equipment” used in R2.1 and R3.1 should be modified, as there is no such term in the NERC Glossary of Terms. “Rating” and “Equipment Rating” are both defined terms. Yet, “Equipment” and “Ratings of Equipment” are not.</p> <p>F. The reference to R2.1 in R3.2 should be changed to R3.1.</p> <p>G. In R7, recommend changing “as scheduled” to “as requested”.</p>
Xcel Energy	<p>A. FERC approval aside, Xcel Energy believes that facility verification, as required under NERC-approved standards MOD-024 and MOD-025, provides a more accurate value for the purposes of planning and operation. Xcel Energy has been following the guidelines of the Regional Entities in its three operating regions (MRO, SPP, and WECC) for performing these verifications for multiple decades. It is the information obtained from the verification tests that is used for reporting to the NERC GADS system, to Transmission Planning for use in load flow studies, and to Transmission Operations for real-time operation. The nameplate design value that results from a FAC-008 analysis is of value only for long-range planning prior to construction or operation of a new facility. We fail to see how reliability is enhanced when there are two different numbers being reported that describe the same facility rating. Therefore, we feel R1 should be deleted from the standard. Facility ratings from generator terminal to the interconnection (R2) should be added to MOD-024 and MOD-025, and not included in the scope of FAC-008.</p>

Organization	Question 6 Comment
	<p>B. If R1 is retained, R.1.1.1 & R1.1.2 should be bulleted. R.1.1 says “The documentation shall contain at least one of the following”. It doesn’t say “the documentation shall contain BOTH of the following”. Since compliance is evaluated at the requirement level, and both of these are NOT required, we feel they should be bulleted.</p> <p>C. If R2 is retained, we feel the sub-requirements under R2.1 and R3.1 should be bulleted, just as proposed for R1.1 above. The corresponding measures should also be modified to correctly reflect that not “all of the items” in Parts 2.1 and 3.1 have to be included.</p> <p>D. Xcel previously expressed concerns about documentation of the basis for ratings of older facilities. We appreciate the drafting team’s response which indicated that this “Standard does not require the recreation of data that is no longer available or no longer accessible for any reason.” However, no modifications were made to the requirements to clarify this. We feel the standard should be clear about expectations. Since it is not understood how, or if, the drafting team’s responses could be used to clarify the intent of the requirement during an audit, we feel it is critical that specific language be included. If R2 is retained, we recommend either 1) add a new bullet under 2.1 and 3.1 with language identical to 1.1.2, or 2) modify the 3rd bullet under 2.1 (currently R2.1.3) and 3.1 (currently R3.1.3) with similar clarifying language as 1.1.2.</p> <p>E. The phrase “Ratings of the Equipment” used in R2.1 and 3.1 should be modified, as there is no such term in the NERC glossary. “Rating” and “Equipment Rating” are both defined terms. Yet, “Equipment” and “Ratings of Equipment” are not.</p> <p>F. The reference to R2.1 in R3.2 should be changed to R3.1.</p> <p>G. In R7, recommend changing “as scheduled” to “as requested”.</p>
	<p>Response: The FR SDT thanks you for your comment. A) Using a rating acquired via testing is an acceptable method for complying with R1.</p> <p>B. The FR SDT agrees, and has changed what had been numbered as 1.1.1 and 1.1.2 to bullets.</p> <p>C. The FR SDT agrees, and has changed what had been numbered as 2.1.1 and 2.1.2 and 2.1.3 to bullets – and made a similar change to convert the numbered items under 3.1 to bullets.</p> <p>D. Requirement R1, Part 1.1.2 (now a bulleted item in the revised standard) applies to generation equipment. R2 and R3 apply to non-generator equipment. It is not appropriate to apply Requirement R1, Part 1.1.2 (now a bulleted item in the revised standard) to R2 and R3.</p> <p>E. Revised to “Ratings of equipment”</p> <p>F. We concur and have made the revision.</p> <p>G. “as scheduled” better reflects the intent of the requirement. Use of “as requested” might imply that an entity must respond</p>

Organization	Question 6 Comment
<p>immediately. This is not the intent of the requirement.</p>	
<p>IRC Standards Review Committee</p>	<p>a. R1.1.2: The phrase “any of which may be supplemented by engineering analyses” does not seem appropriate in a standard requirement as it is not required nor measurable. We suggest this be deleted.</p> <p>b. There are 2 sets of VSLs for R3. We believe the second R3 should read R4.</p>
<p>Response: The FR SDT thanks you for your comment.</p> <p>a) The FR SDT feels that this statement provides needed clarification and will retain the language.</p> <p>b) We agree and have revised the numbering.</p>	
<p>CenterPoint Energy</p>	<p>CenterPoint Energy believes Requirement 7 should include Transmission Owner(s) in the listing of associated entities that should be provided with Facility Ratings; that is, a Generator Owner should provide ratings to the associated Transmission Owner. This is needed as a Transmission Owner cannot accurately develop ratings, which must be based on the most limiting series equipment, for its Transmission Line elements without knowing the ratings of series line equipment in an interconnecting switchyard owned by a Generator Owner.</p>
<p>Response: The FR SDT thanks you for your comment. We concur and have added Transmission Owner to the requirement.</p>	
<p>Constellation Power Source Generation, Inc.</p>	<p>Constellation Power Source Generation, Inc. (CPSGI) agrees in principle with the comments filed by RRI Energy in response to questions 1 - 5 above.</p>
<p>Response: The FR SDT thanks you for your comment. Please see responses to questions 1-5 above.</p>	
<p>Great River Energy</p>	<p>GRE does not believe that the SDT has achieved their goal of adequately conveying to the GO that they are not required to have two sets of Facility Ratings. It appears that it is a requirement to have two sets of Facility Ratings. One set for the "black box" portion of the plant up to either the generator terminals, the low side of the GSU or the high side of the GSU and one set for from wherever the first set of Facility Ratings ended up to the point of interconnection with the with the TO.</p>
<p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator</p>	

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<p>Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p>	
<p>RRI Energy Inc</p>	<p>In the background information the SDT states: The SDT also notes that FAC-008-1 is FERC approved and enforceable, while neither MOD-024 nor MOD-025 has been approved by FERC. Therefore, the SDT is of the opinion that Generator Owners cannot be “exempted” from the Requirements, or the intent, of FAC-008 regardless of the views of being possibly duplicative to other standards (either MOD-024 or MOD-025). We do not agree with this opinion. Once submitted and approved by FERC won't this standard replace any existing FAC-008? Based on the SDT's logic the industry could never propose a change to a FERC approved standard. Standards that are cast in concrete will hinder improvements in reliability because they will not be able to change with technology and operating experience.</p>
<p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p>	
<p>SERC Planning Standards Subcommittee</p>	<p>In the Lower VSL for R2, remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1. 2.1 states that the methodology shall be consistent with at least one of 2.1.2, 2.1.2, and 2.1.3. This also applies to Moderate, High, and Severe VSLs for R2. This also applies to all 4 VSL levels for R3.</p>
<p>Response: The FR SDT thanks you for your comment. We agree and have made the suggested edit.</p>	
<p>SPS Energy</p>	<p>Is the facility rating exercise considered an actual "event" that occurs at a certain time on a certain date, much like the RBA in CIP-002-2? Should it be performed periodically? Or is performing the exercise one time sufficient? There is no periodicity in the standard, which contributes to the ambiguity. How many instances of tests or backed-into calculations would satisfy the need to consider ambient conditions? In other words, over a twelve month period a facility can likely have 365 facility ratings depending on conditions. How many of these, if any, would be useful for planning or operations? Also, if it is an event, and the rating exercise took place on a day a cooling tower cell was out of service limiting the facility output by say 15%, then that would be the most limiting piece of equipment, on that day. But the cooling tower cell will be repaired. Would that repair then precipitate another facility rating exercise? In light of other standards requirements that mandate daily reporting of capability and periodic performance tests, the revised FAC-008-2 continues to be irrelevant to Generator Owners and dangerous to the BES if used for operational</p>

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	<p>purposes. Generator Owners should be removed from the applicability for FAC-008-2.</p>
<p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” The requirements call for documentation of your ratings. Other requirements dictate the frequency of determining the ratings.</p>	
<p>Manitoba Hydro</p>	<p>Manitoba Hydro does not believe that lack of documentation or incomplete documentation rates a VSL of Severe, but would agree that a severe violation is warranted if limits are not provided. Therefore, there should not be any case of a Severe VSL associated with R1, R2, R3, R4 or R5. A Severe Violation Severity Level should be limited to situations where rating data is not provided (ie. a violation of R7). The critical issue is that planners and operators of the electric system have rating data. How does the failure to make a Facility Ratings Methodology document available for inspection (a violation of R4) jeopardize the reliability of the system?</p> <p>The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems.</p> <p>A narrow interpretation of Requirement 2.2 and Requirement 3.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data.</p> <p>Manitoba Hydro recommends that Requirements 2.1, 2.2, 3.1 and 3.2 be revised as follows:</p> <p>R2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:</p> <p style="padding-left: 40px;">R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p style="padding-left: 40px;">R2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and</p>

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	<p>Electronics Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).</p> <p>R2.1.3. A practice that has been verified by testing or engineering analysis</p> <p>R2.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R2.1.1, R2.2 or R2.1.3.</p> <p>R2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in R2, Part 2.1 including identification of how each of the following were considered:</p> <p>R2.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>R2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications, if available.</p> <p>R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p> <p>R3.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:</p> <p>R3.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p>R3.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronics Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).</p> <p>R3.1.3. A practice that has been verified by testing or engineering analysis</p> <p>R3.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R3.1.1, R3.2 or R3.1.3.</p> <p>R3.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in R3, Part 3.1 including identification of how each of the following were considered:</p> <p>R3.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>R3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications, if available.</p> <p>R3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p>
<p>Response: The FR SDT thanks you for your comment. The VSL is only applied after a violation of the standard has been determined. We believe that you are confusing the violation risk factor with the violation severity level.</p> <p>Except for the verification component, adding this suggestion is redundant with 2.1.3 and 3.1.3. The words “a practice” include</p>	

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	<p>“operational experience” that show equipment loadings that equal the rating for the rating duration specified. The SDT believes such practice must be supportable via testing or engineering analysis. Your change would circumvent the verification. Operating Limitations (Part Requirement R2, Part 2.2.4, which you omitted) are part of the underlying assumptions for the rating methodology which should be considered.</p>
<p>Georgia System Operations Corporation</p>	<p>None.</p>
<p>Northeast Power Coordinating Council</p>	<ul style="list-style-type: none"> i. On page 1, regarding paragraph 1.2 under R1., the words “do not exceed” should be replaced with “correspond to”. ii. On page 2, regarding paragraph 2.3 under R2., the word “respect” should be replaced with “correspond to”. iii. On page 2, regarding R3., the second “each” in the first line should be deleted. iv. Also, in sub-paragraph 3.2 on p. 3, the reference to R2.1 should be a reference to R3.1. v. The sub-paragraphs under 2.2 and 3.2 repeat each other word for word with only one word of difference between Requirements R2 and R3: the use of “Generator” instead of “Transmission”. Suggest that those two Requirements be reviewed to see if they can be combined to eliminate duplication. vi. Sub-paragraph 3.4.1 on page 3 has no wording associated with it.
	<p>Response: The FR SDT thanks you for your comment.</p> <ul style="list-style-type: none"> i. Point of Requirement R1, Part 1.2 is to makes sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not “correspond to”. ii. Point of Requirement R2, Part 2.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not “correspond to”. lii and iv. We concur and have made the edits v. These requirements have been kept separate to ensure clarity of the intent of the requirements. vi. We have corrected the formatting error.
<p>SCE&G</p>	<p>Phil Kleckly: In the Lower VSL for R2, remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1. 2.1 state that the methodology shall be consistent with at least one of 2.1.1, 2.1.2, and 2.1.3. This also applies to Moderate, High, and Severe VSLs for R2. This also applies to all 4 VSL levels for R3.</p>

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<p>Response: The FR SDT thanks you for your comment. We concur and have made the suggested edits.</p>	
PacifiCorp	<p>Please explain 2.2.4 and the footnote below. This is unclear. 2.2.4. Operating limitations.1 1 Such as temporary de-ratings of impaired equipment in accordance with good utility practice.</p>
<p>Response: The FR SDT thanks you for your comment. The footnote provides one example of Operating Limitations to consider in the Facility Ratings methodology. Other factors may include environmental or legal constraints on output or duration of generation.</p>	
Omaha Public Power District	<p>R2.4: Change “but not limited to” to “but not be limited to” to be consistent with R3.4.1.</p> <p>R3, first paragraph: Strike the second occurrence of the word “each”.</p> <p>R3.2, first paragraph: It appears that “R2.1” was intended to be “R3.1”.</p> <p>M3: Strike the second occurrence of the word “each”.</p> <p>M4: It appears that “Requirement 34” was intended to be “Requirement 4”.</p> <p>M4, M5, R4, and R5: M4 and M5 are inconsistent with R4 and R5 with regard to Generator Owners. R4 and R5 refer to a Generator Owner’s documentation for determining Facility Ratings but not its Facility Ratings Methodology, while M4 and M5 refer to a Generator Owner’s Facility Ratings Methodology but not its documentation for determining Facility Ratings.</p> <p>R5: If the first sentence of R5 is to retain the reference to a Generator Owner’s documentation for determining Facility Ratings, then it seems like the second sentence of R5 needs to be revised to also include a reference to the Generator Owner’s documentation for determining Facility Ratings.</p> <p>M6: Change “documentation used to develop its Facility Ratings” to “documentation for determining its Facility Ratings” to be consistent with the wording used in other parts of the standard.</p>
<p>Response: The FR SDT thanks you for your comment. We concur with your comments and have made the suggested revisions.</p>	
AEP	<ul style="list-style-type: none"> i. Suggest adding additional alternative, i.e. “performance history,” to R2.1.3. ii. Footnote 1 and 2 should be included in the requirement if it is to be applicable. We believe “temporary de-rates” should not be included in the equipment rating for R2.2.4. iii. R3.2 typo “R2.1” should be “R3.1.” iv. R3.4.1 should read “thermal capability of relay protective devices” instead of just “relay protective devices”, thus

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	<p>deferring to PRC-023 to address relay trip settings, since relay trip settings are not Facility Ratings.</p> <p>v. We do not believe that the change shown in R4 was necessary.</p> <p>vi. " R7 " Delete the phrase "modifications to existing Facilities and re-ratings of existing Facilities" since the term "existing Facilities" already covers the ratings that are there today or anything that may alter those ratings on those "existing Facilities" in the future.?</p> <p>vii. How do M1 and M2 differ from one another?</p>
<p>Response: The FR SDT thanks you for your comment.</p> <p>i. We concur and have added this to Requirement R2, Part 2.1.3 (Now the third bullet under Requirement R2, Part 2.1 in the revised standard.)</p> <p>ii. The footnote provides one example of Operating Limitations to consider in the Facility Ratings methodology. Other factors may include environmental or legal constraints on output or duration of generation.</p> <p>iii. We have made the suggested edit.</p> <p>iv. Requirement R3, Part 3.4.1 requires that the methodology include the "scope of equipment addressed" which includes the thermal capabilities of the relay as well as the relay settings.</p> <p>v. Revisions to R4 were required to reflect revisions in verbiage of R1 and R2.</p> <p>vi. We do not agree. The requirement provides needed clarity as written.</p> <p>vii. M1 applies to R1 (generator equipment); M2 applies to R2 (from generator to change in ownership of facilities)</p>	
<p>US Bureau of Reclamation</p>	<p>The measure M6 needs to be revised to be consistent with the proposed changes in R1. The term "evidence to show its Facility Ratings are consistent" might imply that an independent assessment of consistency is needed. Revising the language as follows would clarify the issue: "Each Transmission Owner and Generator Owner shall have as evidence its Facility Ratings which were developed with the documentation used to determine its Facility Ratings as specified in Requirement R1 or Facility Ratings which were developed utilizing its Facility Ratings Methodology as specified in Requirements R2 and R3 (Requirement 6).</p> <p>"The Violation Severity Table also needs to be adjusted to remain consistent with R1. The following changes should be incorporated into the R6 for all levels. "The responsible entity failed to establish Facility Ratings utilizing the documentation used to determine its Facility Ratings as specified in R1 or Facility Ratings utilizing Facility Ratings Methodology as specified in R2 for X% or less of its solely owned and jointly owned Facilities. (R6)"</p>
<p>Response: The FR SDT thanks you for your comment. We concur and have made the suggested edits.</p>	

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Calpine Corporation	<p>The NERC Glossary of Terms Used in Reliability Standards defines the following: Facility “ A set of ELECTRICAL equipment that operates as a single Bulk Electric System Element (e.g., a line, a generator, a shunt compensator, transformer, etc.) Facility Rating “ The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility. It would seem clear from the above definitions that a Facility Rating would apply ONLY to electrical equipment. For a generation facility, this would exclude the prime mover or other energy source or ancillary equipment that could limit the actual real power output of the Facility. Requirement R 1.1.2 allows a Generator Owner the option of establishing the Facility Rating up to the generator terminals or low or high side terminals of the step up transformer by providing the following documentation: Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analysis. Testing or historical performance isn’t sufficient to establish a Facility Rating without knowing the underlying Equipment Rating for each piece of Equipment which comprises the subject portion of the Facility. Since electrical equipment can be operated above its rating for an extended period of time without obvious damage, the fact that a Facility has demonstrated a particular real power flow does not establish that no individual piece of equipment is violating its rating, as required by the definition of Facility Rating. It’s possible to upgrade or replace a prime mover such that its capability is above the nameplate rating of the generator. In this instance, running the prime mover at its full capability is above the rating of the generator, unless the generator rating has also been increased, which should then have accompanying documentation. Other than the generator itself, all Equipment that makes up a Generation Facility is included in Transmission Facilities. Since the generator is just another piece of electrical equipment, with ratings for voltage, frequency, current, etc., there’s no reason to have separate requirements for Generation Facilities and Transmission Facilities. Based on comments received on the previous draft of the standard, there is a large body who believes that the Facility Rating for generation facilities is its capability to produce real or reactive power. There is also a contingent that believes the Facility Rating for generation facilities is the rating of the most limiting piece of electrical equipment. By inclusion of Requirements R 1.1.1 and R 1.1.2, the drafting team has allowed both definitions to be used at the Generator Owner’s discretion. As has also been pointed out in previous comments, the rating of the most limiting piece of electrical equipment and the capability of the prime mover are likely to be significantly different and are used for entirely different purposes. By allowing either to be provided to various entities as the Facility Rating, the end user does not know what they’re being provided. This could lead to erroneous results in planning and subsequent impacts on reliability. It’s recommended that the drafting team follow the NERC definition for Facility and Facility Rating and explicitly limit the scope to electrical equipment only. It’s recommended that this be clearly described in an appendix attached to the standard to eliminate the confusion that exists today. In addition, the appendix should refer to MOD-024 and MOD-025 as the standards which demonstrate the real and reactive power capability of the Facility, but do not represent a generation facility’s Facility Rating.</p>

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	<p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1. We believe that this will address your concern about “electrical” equipment only. This standard (FAC-008) allows performance testing or historical performance records as a means to determine facility ratings as provided in MOD-024 and MOD-025, therefore the FR SDT does not believe that there is a need to explicitly name those standards here.</p>
<p>RRI Energy</p>	<p>The primary basis given for maintaining the applicability of generator owners is that FAC-008-1 is a FERC approved standard, even though the standard was written at a time when few were paying attention to the requirements from a legally binding perspective. By this logic, the Standard requirements will last to infinity. There is no disagreement that Generator Owner facility ratings should be rated on a technically sound basis. The standard requirements are centered more on the excessive management of documentation rather than reliability of the BES. It is not justifiable to place the same level of documentation requirements to the radial components of a generator owner as those applied to the network components of a transmission system. The generator facilities are designed as projects by registered professional engineers and are connected to the transmission facility through an application process. Changes in unit output ratings must go through a similar process. Generator owner facilities are not subject to the dynamic and ever-changing conditions of a networked transmission system. Generating owners are expending unproductive resources to reverse engineer documentation of Facility Ratings at locations that have multiple decades of successful operation. No one is seriously questioning the ability of the generating units to deliver their specified outputs except for regulators in an audit conditions, that are finding non-compliance on documentation technicalities that have no material impact on the reliability of the BES.</p>
	<p>Response: The FR SDT thanks you for your comment. The requirement calls for documenting how facility ratings were determined. This may simply state that actual testing of the generator was used to determine the rating.</p>
<p>Southern Company</p>	<p>The wording in R3 (except for those generating unit Facilities addressed in R1) should say (except for those generating unit Facilities addressed in R1 and R2).</p> <p>The wording in R3.2 needs to be changed from “Equipment Ratings identified in R2.1” to “Equipment Ratings identified in R3.1.”</p> <p>To make the wording in the requirements consistent, the wording in R3.2 should be changed from “Equipment Ratings identified in R2.1” to read “Equipment Ratings identified in Requirement R3, Part 3.1.”</p> <p>Remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1 in the VSLs for R2. Requirement 2.1 states that the methodology shall with at least one of 2.1.1, 2.1.2, and 2.1.3.</p> <p>Remove 3.1.1, 3.1.2, and 3.1.3 and replace them with 3.1 in the VSLs for R3. Requirement 3.1 states that the methodology shall with at least one of 3.1.1, 3.1.2, and 3.1.3.</p>

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	The VSL table needs to be corrected to show R4 in the R# column rather than having two R3s.
Response: The FR SDT thanks you for your comment. We concur and have made the suggested revisions.	
Pepco Holdings, Inc. - Affiliates	There are some typographical errors in the draft - Requirement R3.2 includes a reference to Equipment Ratings identified in R2.1. That should be R3.1. Measure M4 refers to a request made in accordance with Requirement 34. That should be Requirement 4.
Response: The FR SDT thanks you for your comment. We concur and have made the suggested revisions.	
PJM	This standard attempts to combine rating generators with rating transmission lines. They are two very different types of equipment that have distinctive characteristics which are not comparable and should not be grouped together in this way. The MOD standards handle generators sufficiently and generators should not be forced into the FAC transmission standards.
Response: The FR SDT thanks you for your comment. The requirements call for documenting how facility ratings were determined and providing that documentation to others. The MOD standards address verification of the ratings.	
Entergy Services, Inc	We note that the consideration of comments to the August comments stated that “The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to “Lower”. “ However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs.
Response: The FR SDT thanks you for your comment. We have revised the VRF for R1 and R2 to Lower.	