

Comment Report

Project Name: 2021-08 Modifications to FAC-008 | SAR
Comment Period Start Date: 12/9/2021
Comment Period End Date: 1/27/2022
Associated Ballots:

There were 48 sets of responses, including comments from approximately 87 different people from approximately 74 companies representing 7 of the Industry Segments as shown in the table on the following pages.

Questions

1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope, please provide your recommendation and explanation.

2. Provide any additional comments for the SAR drafting team to consider, if desired

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NA - Not Applicable,RF,SERC,Texas RE,WECC	ACES Standard Collaborations	Bob Solomon	Hoosier Energy Rural Electric Cooperative, Inc.	1	SERC
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Bill Hutchison	Southern Illinois Power Cooperative	1	SERC
					Susan Sosbe	Wabash Valley Power Association	3	RF
					Dominic Birk	Big Rivers Electric Corporation	1	SERC
					Kylee Kropp	Sunflower Electric Power Corporation	1	MRO
					Amber Skillern	East Kentucky Power Cooperative	1	SERC
					Ryan Strom	Buckeye Power, Inc.	5	RF
					Jennifer Bray	Arizona Electric Power Cooperative, Inc.	1	WECC
					Nick Fogleman	Prairie Power, Inc.	1	SERC
Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
MRO	Kendra Buesgens	1,2,3,4,5,6	MRO	MRO NSRF	Bobbi Welch	Midcontinent ISO, Inc.	2	MRO
					Christopher Bills	City of Independence Power & Light	3,5	MRO

					Fred Meyer	Algonquin Power Co.	3	MRO
					Jamie Monette	Allete - Minnesota Power, Inc.	1	MRO
					Larry Heckert	Alliant Energy Corporation Services, Inc.	4	MRO
					Marc Gomez	Southwestern Power Administration	1	MRO
					Matthew Harward	Southwest Power Pool, Inc.	2	MRO
					LaTroy Brumfield	American Transmission Company, LLC	1	MRO
					Bryan Sherrow	Kansas City Board Of Public Utilities	1	MRO
					Terry Harbour	MidAmerican Energy	1,3	MRO
					Jamison Cawley	Nebraska Public Power	1,3,5	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					David Heins	Omaha Public Power District	1,3,5,6	MRO
					George Brown	Acciona Energy North America	5	MRO
Duke Energy	Kim Thomas	1,3,5,6	FRCC,RF,SERC,Texas RE	Duke Energy	Laura Lee	Duke Energy	1	SERC
					Dale Goodwine	Duke Energy	5	SERC
					Greg Cecil	Duke Energy	6	RF
FirstEnergy - FirstEnergy Corporation	Mark Garza	1,3,4,5,6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF

					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Tricia Bynum	FirstEnergy - FirstEnergy Corporation	6	RF
					Mark Garza	FirstEnergy-FirstEnergy	4	RF
Pacific Gas and Electric Company	Michael Johnson	1,3,5	WECC	PG&E All Segments	Marco Rios	Pacific Gas and Electric Company	1	WECC
					Sandra Ellis	Pacific Gas and Electric Company	3	WECC
					James Mearns	Pacific Gas and Electric Company	5	WECC
Southern Company - Southern Company Services, Inc.	Pamela Frazier	1,3,5,6	MRO,NPCC,RF,SERC,Texas RE,WECC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					James Howell	Southern Company - Southern Company Generation	5	SERC

1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope, please provide your recommendation and explanation.

Thomas Foltz - AEP - 3,5,6

Answer No

Document Name

Comment

AEP disagrees with the perceived industry needs provided in this SAR, and recommends that it not be pursued. The concerns addressed in the SAR regarding the determination and reporting of generating unit capability are already addressed by other standards such as MOD-025 and MOD-026, so as a result, this SAR does not advance or improve the reliability of the BES. Rather than a formal NERC Project which creates or revises existing standards and/or definitions, the author might instead consider other means in obtaining the clarity they seek.

The proposed SAR fails to distinguish between generating unit capability and thermal capability of the series path between generator and POI (point of interconnection). In transmission system modeling, parameters establishing unit capability are entirely separate from those establishing ratings of the connection facilities between the generator and the transmission grid. It is possible for a generating unit to be capable of an output greater than the rating of the facilities connecting the generator to the grid, and vice versa. Generator capabilities can be impacted by changes to the mechanical elements driving the generator. If a GO improves the capability of a unit, one needs to determine whether that increased capability can be safely transmitted to the grid. For that to be obtained, one also needs to know the electrical rating of the series path. As an example, and further demonstrating the sufficiency of the current standard, FAC-008 R1.1 states "Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses."

In addition, AEP believes that the existing phrase "jointly owned" as related to facilities is sufficiently clear.

Likes 0

Dislikes 0

Response

Tony Skourtas - Los Angeles Department of Water and Power - 1,3,5,6

Answer No

Document Name

Comment

LDWP accounts for mechanical limitations in its ratings. For this reason, it is felt that the proposed changes relating to mechanical elements would be unnecessary.

Likes 0

Dislikes 0

Response

Thomas Breene - WEC Energy Group, Inc. - 3,4,5,6**Answer** No**Document Name****Comment**

WEC Energy Group supports the EEI comments on the SAR. The SAR appears to be based on a fundamental misunderstanding of the purpose of FAC-008. Implementation Guidance to clear up this confusion may be necessary,

Likes 0

Dislikes 0

Response**Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC****Answer** No**Document Name****Comment**

For Objective 1: Disconnects between real generator capabilities and what is in the WECC models are not something to be resolved in FAC-008. The MOD generator testing requirements when properly communicated to the Transmission Planner establish the ability to coordinate operating capabilities. If elements identified in this SAR do limit the output of generators, it should be documented in the capability reports. Allowing the FAC-008 standard to extend beyond the current scope opens the door for the need to include all sorts of mechanical or non-electrical assets that are not necessary. There are disconnects related to solar facilities and their ability to provide power in differing seasonal conditions. We should address this issue. A better solution might be to update the MOD standards for generator testing.

For Objective 2: Super terms or terms created by using multiple NERC defined terms create issues in the industry when definitions are updated. Allowing another super-term, is a step backward.

For Objective 3: Facility – is a widely used term. The revision of this term is larger than FAC-008 and if a revision is necessary, we might do well to have it as a stand-alone project. To update this to include detailed electric system components could have significant unintentional ramifications on other standards such as CIP-002 and the application of the definition of Bulk Electric System.

For Objective 4: All owners joint or otherwise should have access to the Facility Ratings and should be able to provide them upon request. If the operating agent is not communicating with all the owners, that is a contractual matter, not a reliability one. While joint ownership is prominent in the western region it is not common enough to warrant a new definition affecting all of NERC.

Likes 0

Dislikes 0

Response**Donald Lock - Talen Generation, LLC - 5****Answer** No

Document Name	
Comment	
<p><i>Talen agrees with the North American Generator Forum (NAGF) in being opposed to this SAR. Including mechanical components will not result in more accurate facility ratings, nor do these components pertain to ratings at all. They instead establish the generation unit capability, which constantly varies with operating conditions. ISOs wanting capability information have established market rules reflecting their summer and winter correct-to ambient conditions, testing criteria and the like, ref. for example PJM's ICAP, NYISO's DMNC and ERCOT's HSL. There is no gap to address, so including mechanical components will not add to reliability of the BES. In addition, Talen joins with the NAGF in believing that the term "jointly owned" is clearly understood by industry and does not need additional clarific</i></p>	
Likes	0
Dislikes	0
Response	
<p>Nazra Gladu - Manitoba Hydro - 1,3,5,6</p>	
Answer	No
Document Name	
Comment	
<p>On the mechanical rating side, our generator rating methodology correctly captured the turbine and other mechanical limits. This seemed to be an obvious interpretation of the standard. Manitoba Hydro doesn't believe a generator can misoperate a plant and exceed the turbine rating. There is a possibility to have a modelling error and the turbine limit is ignored. However, all the other electrical elements are considered and there would be no downstream reliability issue. Through testing, the model would eventually be adjusted to match field results. MOD-025-2 standard (Verification and Data Reporting of Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability) is developed to test and verify both Real and Reactive power output of BES generators.</p>	
Likes	0
Dislikes	0
Response	
<p>Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company</p>	
Answer	No
Document Name	
Comment	
<p>Southern Company supports EEI's comments in response to the proposed Standards Authorization Request for Project 2021-08. Additionally, we offer the following remarks for consideration.</p>	

FAC-008 as written is correctly defined as an electrical rating standard for the Bulk Electric System (BES) meaning BES lines, transformers and generator electrical ratings so that electric facilities are not overloaded and damaged.

Per the Background information, it is stated that entities have “mis-interpreted” the terms “Element” and “Facility” for use within FAC-008 Standard. The NERC Glossary of Terms clearly states that an “Element” is; “An electrical device...” and “Facility” is; “A set of electrical equipment...”. The industry has not mis-interpreted that FAC-008 is an electrical Facility design Standard, concerning the electrical components that make up the Facility and their electrical capabilities.

Furthermore, the SAR goes on to state (see Purpose and Goal) that “... provided Generator Facility Ratings that are higher than the actual output the plant is capable of...”. FAC-008 is not intended to capture the real and reactive output of a generator. This is the function of MOD-025-2, Verification and Data Reporting of Real and Reactive Power Capability.

There is nothing in FAC-008 which would prevent an entity from including mechanical components in their facility rating methodology. Therefore, this is additional reason not to revise the standard. The current FAC-008 is based on electrical characteristics. Per R8, the RC, PC, TP, TOP, and TO can ask for “requested information” concerning the Facility Ratings. The issue the SAR brings up can be minimized by these entities asking if there are any non-electrical components that would impact the outputs per MOD-025-2.

The SAR should delete non-electrical components since FAC-008 is an Electric Facility Rating Standard. Outputs from a generator are contained in MOD-025-2.

This request for a NERC standard change is primarily an enforcement issue and not a Bulk Electric System (BES) risk.

BES transmission lines and transformers are measured in a single dimension in terms of MegaVolt Amperes (MVA) or amps. Transmission lines and transformers do not care how many amps are real amps or reactive amps.

BES generators are measured in two dimensions in NERC standard MOD-032, both Megawatts (MW) and MegaVolt Amps Reactive (MVAR) as shown by a generator “D-curve”. MOD-032 correctly measures generator maximum power (Pmax), minimum power (Pmin), maximum reactive power (Qmax), and minimum reactive power (Qmin). Since MOD-032 correctly measures generator capabilities and limits in two dimensions (both P and Q), then no BES system risk exists or would be addressed by modifying FAC-008 to include mechanical limits.

Therefore, the issue being addressed is an enforcement issue to clarify understanding only and not a BES risk.

For FAC-008 Joint Owned Facility Ratings:

Southern Company currently has jointly owned facilities with other entities. Where NERC compliance responsibility are unclear, our longstanding practice is to develop CFRs or contractual agreements to clarify those responsibilities. Having never experienced any issues with the term “jointly owned”, we do not see a reason to revise the standard for this clarification and we reject the proposed revisions (all 3 options). Although Southern Company opposes any revision to the standard, the least impactful would-be Option A. We reject the idea of adding any standard specific definitions. (Option B) and Southern Company also opposes the creation of an additional compliance guide (Option C).

Likes 0

Dislikes 0

Response

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer

No

Document Name

Comment

AEPCO has signed on to ACES comments below:

ACES believes that FAC-008, as written, accurately captures electrical ratings by utilizing terms “Element” and “Facility” as defined in the NERC Glossary of Terms for the Bulk Electric System, which refers to electrical components such as lines, transformers and generator electrical rating to prevent electrical facilities being overloaded and damaged.

Additionally, the SAR noted that “Provided Generator Facility Ratings that are higher than the actual output the plant is capable of, which could be detrimental to reliability during actual system emergencies.” This statement is not accurate as MOD-025-2 (Verification and Data Reporting of Real and Reactive Power Capability) reliability standard has been put in place to prevent such inconsistencies from happening. On the other hand, MOD-032 reliability standard accurately measures generator capabilities and limits them in both P and Q dimensions, which further eliminates the need of the proposed revision to FAC-008.

The SAR also proposes additional clarification on “Jointly Owned” term, which also could be addressed in other forms without needing to revise the standard in forms such as developing a Reliability Guideline to focus entities on obtaining “a single most limiting data point” from its neighboring entities.

Likes 0

Dislikes 0

Response

LaKenya VanNorman - Florida Municipal Power Agency - 3,4,5,6 - SERC

Answer

No

Document Name

Comment

FMPA does not believe there is a gap to address. The SAR seems to be founded on a lack of understanding of the purpose of Facility Ratings. “Ratings” and “capability” seem to be getting conflated. Electrical ratings are compared against power system conditions that might occur (e.g. MW/MVAR flow (the capability of the thermal plant process) is compared against MVA/current carrying ratings, system voltage is compared against equipment voltage ratings, etc). Mechanical process capability can change hourly based on temperature, pressure, humidity, and confirmation of the plant maximum capability is covered by the existing MOD-025 standard. Thus, electrical ratings are covered in FAC-008 and mechanical capability is covered in MOD-025. Existing issues with the MOD-025 standard are being addressed, and it remains the appropriate place to consider thermal capability. PCs, TPs, BAs, TOPs, and RCs need the electrical equipment ratings of a plant for power system modeling, so changing FAC-008 to somehow “replace” electrical ratings with mechanical ones is not practical and would add no value – these registered entities would still need all the same data they needed before. Facility Ratings for a power plant are not one number or value, they are many, and all are needed (MVA ratings, current ratings, short circuit interrupting current ratings, voltage ratings and frequency ratings). At the end of the day, we are arguing over where/how to derive and indicate a plant’s gross “Pmax”, and FMPA believes this has been resolved in a simple and straightforward manner by separating the electrical ratings in FAC-008 and the plant capability (which can include some internal electrical limitations that are not modeled in power system models) in MOD-025.

FMPA believes the language surrounding “jointly owned” is already clear. However, we are not against improving the language in the standard so long as the intent is not changed and would review and comment on the proposed new language at such time as it is drafted (if it is drafted).

Likes 0

Dislikes 0

Response

Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments

Answer

No

Document Name

Comment

PG&E supports the comments submitted by the Edison Electric Institute (EEI) that the SAR for FAC-008 is not required since the apparent intent of the SAR is an interpretation that is not the purpose of a SAR. As noted in the EEI comments, we agree there is no ambiguity in the Standard and the approved ERO guidance.

Likes 0

Dislikes 0

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer

No

Document Name

Comment

MEC supports the MRO NSRF comments.

Likes 0

Dislikes 0

Response

Robert Hirschak - Cleco Corporation - 1,3,5,6

Answer

No

Document Name

Comment

See EEI comments for explanations

Likes 0

Dislikes 0

Response

Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy

Answer No

Document Name

Comment

Mechanical limits are not appropriate for determining electrical Facility Ratings.

The phrase "jointly owned" appears to be adequate and does not require revision.

Likes 0

Dislikes 0

Response

Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6

Answer No

Document Name

Comment

AZPS does not support the proposed changes described in the SAR. AZPS support the below comments submitted by EEI on behalf of its members:

As stated in the NERC Glossary of Terms, a Facility Rating is 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." While non-electrical elements such as prime movers do factor into the overall rating of a generator, FAC-008 is intended to identify, under worst case conditions, the most limiting electrical Element of a Facility so that a reliable Facility Rating can be applied to that Facility in order to ensure it can be reliably operated under all operating conditions. That includes operating conditions that might push a resource beyond its rated capability for short periods of time to meet an emergency operating condition. It is for this reason that non-electrical elements are not considered. For example, if the generating resource is derated due to a non-electrical element, the real Facility Rating may be understated resulting in a rating that does not identify the real emergency rating/capability of that Facility. Lastly, the capability of individual generators, including non-electrical limitations are appropriately reported through TOP-003, not FAC-008. A Facility Rating developed through the sole use of electrical Elements will always provide operators and planners with the electrical limits of their Facilities, thereby allowing planners and operators to plan and operate those facilities reliably even under emergency conditions.

Likes 0

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer	No
Document Name	
Comment	
FirstEnergy supports the comments submitted by the Edison Electric Institute (EEI) that the SAR for FAC-008 is not required since the apparent intent of the SAR is an interpretation that is not the purpose of a SAR.	
Likes 0	
Dislikes 0	
Response	
Alex Higdon - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC	
Answer	No
Document Name	
Comment	
LG&E/KU supports EEI comments in full for this comment period for Project 2021-08 – Modifications to FAC-008 SAR. LG&E/KU would like to emphasize EEI's position that this SAR should not be pursued, given it is more likely to diminish reliability rather than improve it.	
Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Qu?bec Production - 1,5	
Answer	No
Document Name	
Comment	
The following comment is applicable for hydroelectric powerplants and may differ for other types of generation technologies: More information is needed about the inclusion of non-electrical elements that would be included in the calculation of the Facility Ratings. The turbine seems to be the only non-electrical element that potentially impacts the rating of a given facility. The list of every non-electrical element that is foreseen to be covered under this modification project for the FAC-008 should be clearly stated to provide a better understanding of the underlying reasoning.	
Likes 1	Hydro-Qu?bec TransEnergie, 1, Turcotte Nicolas

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer No

Document Name

Comment

Comments: No.

For FAC-008 Mechanical Ratings:

- FAC-008 as written is correctly defined as an electrical rating standard and is consistent with the defined NERC glossary term “Facility Rating” which references voltage, current, frequency or power flow through a facility.
- FAC-008 exists to prevent electrical overloading and Facility damage.
- As stated earlier there was an interpretation. However, the interpretation was incorrect and no additional FAC-008 changes are needed. Therefore, NERC and the SDT should withdraw the SAR.
- The proposed SAR is not addressing a Bulk Electric System risk, rather a misinterpretation and enforcement issue.
- Mechanical limits can be addressed through the MOD-025 & MOD-032 standard data which measures generator capabilities and limits in two dimensions (both P and Q) the four ratings Pmax, Pmin, Qmax and Qmin.
- If the SAR team proceeds, the MRO NSRF suggests adding a separate requirement stating that an entity may “optionally” choose to include a mechanical limit or limits (e.g. such as a turbine or blade limit) as a FAC-008 component rating in its overall FAC-008 Facility Rating calculations, but the inclusion of mechanical limits is “not mandatory” and the scope of mechanical limits to be considered is at the Transmission Owner or Generator Owner’s sole discretion.

For FAC-008 Joint Owned Facility Ratings:

- Industry understands “jointly owned” ratings and no changes are needed.
- If additional FAC-008 scope clarity is needed for “jointly owned” ratings, the MRO NSRF recommends that FAC-008 be clarified to state when an entity is coordinating jointly owned FAC-008 Facility Ratings, the entity is only required to obtain a single most limiting data point from its neighboring entities. Any additional data points beyond the single most limiting element (data point) does not add to any enhanced reliability by neighboring entities. If multiple data points are required by BOTH neighboring entities, this Standard is not a Results-Based Standard but rather a data collection Standard that does not support system stability or reliability.

Likes 0

Dislikes 0

Response

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer No

Document Name

Comment

The inclusion of mechanical elements in the development of Facility Ratings should be at the discretion of the Transmission or Generator Owner. This should be an “optional” proceeding for the Facility Ratings. In relation to BES Generators, MOD-032 measures generator maximum power (Pmax), minimum power (Pmin), maximum reactive power (Qmax), and minimum reactive power (Qmin). MOD-032 correctly measures generator capabilities and limits in two dimensions (both P and Q), then no BES system risk exists or would be addressed by modifying FAC-008 to include mechanical limits. These values are used in many of the planning studies.

For FAC-008 Joint Owned Facility Ratings:

The term Jointly-Owned Facilities needs to be clearly defined. There is an overlap of the term Jointly-Owned in other NERC standards. The expectation of the term should be solely to ensure that it meets the purpose of the standard, without overloading entities with unnecessary information about other entities equipment. A full inventory of the other entity’s equipment may prove to be unnecessary.

Likes 0

Dislikes 0

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5 - WECC

Answer No

Document Name

Comment

The SAR objective # 1 states to alter the language to include non-electrical components in Generator Facility Rating documentation. Objective #3 state to alter the Facility definition in the NERC glossary of Terms to include non-electrical components. Both objectives go beyond the principle of electric reliability. FAC-008 modification is not needed to include mechanical components. Other standards like MOD-032-2 already requires validation of maximum real and reactive power capabilities of a generating unit (model data and actual system behavior data) in the planning environment. In addition, TOP-003-4 (Operational Reliability data) and TOP-010-1 (Real Time Reliability Monitoring and Analysis) already include requirements to identify maximum real and reactive power capabilities of a generating unit in the operating environment.

The SAR objective #4 states to include better definition of jointly owned facilities. Better definition of jointly owned facilities would alleviate entities concern in identifying correctly the jointly owned facilities in their scope.

Likes 0

Dislikes 0

Response

Daniel Gacek - Exelon - 1,3,5,6

Answer No

Document Name

Comment

Exelon does not agree with the proposed scope of the SAR and concurs with the EEI comments to this question.

Likes 0

Dislikes 0

Response

Steven Rueckert - Western Electricity Coordinating Council - 10

Answer

No

Document Name

Comment

With respect to clarification of mechanical elements impact on Facility limits the scope of the SAR is adequate.

But with respect to clarification of the term "jointly owned" the scope of the SAR itself is not sufficient to resolve compliance ambiguity. The SAR should address not only clarification of the term jointly owned as proposed, but also clarify how the term "Facility" should or may be used when establishing a Facility Rating. The current view of WECC is that a "Facility" cannot be defined based only on ownership but must be considered in the context of the NERC Glossary Definition of Facility. This frequently will involve two owners. Only after the complete Facility is identified can the assessment of solely or jointly owned "Facility" be determined and the ambiguity that can then be addressed as requested by the SAR. WECC does not believe partial or incomplete Facilities can be used in the determination of Facility Ratings. Essentially what should be clarified is whether FAC-008 is really intended to establish technically correct "equipment" ratings by the owners of those devices or if it is intended to establish technically correct ratings of complete Facilities which can include the equipment owned by several parties. WECC currently believes it is the latter (Complete "Facilities")

Likes 0

Dislikes 0

Response

Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC

Answer

No

Document Name

Comment

Xcel Energy supports the comments of EEI in that the Standard should not be modified to include non-electrical elements in the determination of GO Facility Ratings.

We do, however, seek clarity on responsibilities of "jointly owned" facilities and which entity is responsible for publishing the overall rating of the facility. If both entities are responsible then guidance to the industry on the application of the recent FERC Transmission Line Ratings rule should be considered. We support limiting the scope of this SAR to addressing a formal definition of Jointly Owned Facility.

Likes 0

Dislikes 0

Response

David Jendras - Ameren - Ameren Services - 1,3,6

Answer No

Document Name

Comment

Ameren agrees with and supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Martin Sidor - NRG - NRG Energy, Inc. - 5,6

Answer No

Document Name

Comment

NRG Energy, Inc. (“NRG”) agrees with the need to clarify the meaning of “generator rating” in R1 but disagrees with requiring the inclusion of non-electrical components in Generator Facility Ratings documentation. NRG also agrees with defining the term “jointly owned” and clarifying GO and TO responsibilities at Points of Interconnection.

The SAR is ambiguous in the intent to change for R1 with two possible interpretations:

- Allowing (mandating) Real Power to include mechanical limitations in the development of Facility Rating; the R1 value is the quantity that will be reported to planning and operational entities to identify the real power capability of a generating unit.
- Allowing (as an option) to identify whether the Facility rating is based upon the equipment rating of the generator or if the mechanical equipment limitation is included to determine real power when reporting to planning and operational entities

Presently, R1 of FAC-008-5 refers to Facility Ratings of generator Facility(ies). Using a literal interpretation of what is plainly worded, a rated voltage and MVA are the two most common quantities associated with a generator Facility rating. These two quantities are static and do not abruptly change without physical alterations or damage to the equipment. Variables and temporary changes that will alter the maximum torque applied to a generator shaft (thereby producing power) will occur for reasons too numerous to list.

NRG has operated throughout the continental United States with registered generating units in six NERC Regions. To our knowledge, NRG has not been asked to provide Facility Ratings to the Transmission Planner or ISO as the source of normal or maximum generating unit power capability. Reliability Coordinators, Balancing Authorities, and Transmission Operators already obtain capability information from generating units that reflects mechanical limitations. Market requirements and processes have already been developed to fulfill the needs and demands of the industry participants to report and receive the information of generating unit output capabilities. Moreover, the reported information is confirmed through MOD-025 testing or other various capability tests performed on scheduled intervals. In the planning horizon this demonstrated capability information is used in studies and modeling for reliability-related activities.

In the operating timeframe the output rating of a generator can change often due to mechanical issues. Independently from FAC-008-5 requirements, NERC already requires these capability changes to be reported (through the TOP and IRO standards) as generator rerates or derates to the Balancing Authority, Reliability Coordinator and Transmission Operator as a normal part of operating. The capability changes are used by contingency analysis and dispatch programs to securely operate in real-time.

If Facility Ratings were the best method to fulfill the objective of reporting unit output capability, the industry likely would have already gravitated in that direction. To fix what appears to be limited and isolated problems, the SAR could unnecessarily force industry-wide reporting changes affecting all GO, RC, BA, and TOPs. It also adds an administrative burden on Generator Owners and Operators by possibly requiring frequent updates to the facility ratings and extensive documentation to justify every change in generator real power output due to temporary changes in boilers, turbines, fans, pumps, etc.

Finally, a change in definition regarding Generator rating may have a trickle-down effect on other standards which require use of that generator rating for establishing or updating settings.

The maximum output capability of a generating unit can be a dynamic quantity for a variety of reasons. Fulfilling the stated objective of the SAR using the defined rating and documentation structure, methodology, and reporting of Facility Ratings can quickly become onerous with no incremental benefits to the security of the BES. If the local reporting process for a unit's output capability is flawed, or if the needed information is not being requested properly, that process needs to get fixed, not FAC-008. As such, NRG does not support these proposed changes.

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

No

Document Name

Comment

The North American Generator Forum (NAGF) is opposed to this SAR. Including mechanical components will not result in more accurate facility ratings nor add to reliability of the BES. In addition, the NAGF believes that the term "jointly owned" is clearly understood by industry and does not need additional clarification.

Likes 0

Dislikes 0

Response

Larry Watt - Lakeland Electric - 1,3,5,6

Answer

No

Document Name

Comment

Lakeland Electric does not believe there is a gap to address. The SAR seems to be founded on a lack of understanding of the purpose of Facility Ratings. “Ratings” and “capability” seem to be getting conflated. Electrical ratings are compared against power system conditions that might occur (e.g. MW/MVAR flow (the capability of the thermal plant process) is compared against MVA/current carrying ratings, system voltage is compared against equipment voltage ratings, etc). Mechanical process capability can change hourly based on temperature, pressure, humidity, and confirmation of the plant maximum capability is covered by the existing MOD-025 standard. Thus, electrical ratings are covered in FAC-008 and mechanical capability is covered in MOD-025. Existing issues with the MOD-025 standard are being addressed, and it remains the appropriate place to consider thermal capability. PCs, TPs, BAs, TOPs, and RCs need the electrical equipment ratings of a plant for power system modeling, so changing FAC-008 to somehow “replace” electrical ratings with mechanical ones is not practical and would add no value – these registered entities would still need all the same data they needed before. Facility Ratings for a power plant are not one number or value, they are many, and all are needed (MVA ratings, current ratings, short circuit interrupting current ratings, voltage ratings and frequency ratings). At the end of the day, we are arguing over where/how to derive and indicate a plant’s gross “Pmax”, and Lakeland Electric believes this has been resolved in a simple and straightforward manner by separating the electrical ratings in FAC-008 and the plant capability (which can include some internal electrical limitations that are not modeled in power system models) in MOD-025.

Lakeland Electric believes the language surrounding “jointly owned” is already clear. However, we are not against improving the language in the standard so long as the intent is not changed and would review and comment on the proposed new language at such time as it is drafted (if it is drafted).

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC

Answer

No

Document Name

Comment

Tacoma Power does not agree with the following proposed language in the SAR: “Produce Generator Owner Facility Ratings that accurately reflect the real power capability of the facility and are therefore useful for reliability-related activities (such as in contingency analysis, SOL determination, etc.)”

Tacoma Power does not agree that there’s an industry need to re-purpose FAC-008 to capture real power capability. Additionally, Tacoma Power does not agree that the purpose of FAC-008 is to produce values to support resource adequacy studies. Tacoma Power reports its Facility Ratings in mVAs. The facility ratings are used as a “do not exceed” this number and are not used to determine what load is available at any given time.

Tacoma Power also does not agree that the current version of the standard excludes non-electrical equipment in GO Facility Ratings. Mechanical components should include the most limiting elements, and Tacoma Power includes mechanical components, i.e., the generator turbine, in its facility rating determinations.

Likes 0

Dislikes 0

Response

Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF

Answer No

Document Name

Comment

ITC supports the comments submitted by EEI

Likes 0

Dislikes 0

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations

Answer No

Document Name

Comment

ACES believes that FAC-008, as written, accurately captures electrical ratings by utilizing terms “Element” and “Facility” as defined in the NERC Glossary of Terms for the Bulk Electric System, which refers to electrical components such as lines, transformers, and generator electrical rating to prevent electrical facilities being overloaded and damaged and believes that adding a mechanical component to this runs counter to the intent of FAC standards.

The SAR noted that “Provided Generator Facility Ratings that are higher than the actual output the plant is capable of, which could be detrimental to reliability during actual system emergencies.” While FAC-008 can result in facility ratings that exceed generator capability, generator capability is not the intent of FAC-008 and this issue is properly addressed in other standards. Specifically, MOD-025-2 (Verification and Data Reporting of Real and Reactive Power Capability) requires verification through measurement or operating data to accurately determine generating facility capabilities. Additionally, MOD-032 (Data for Power System Modeling and Analysis) requires communication of accurate generator capabilities to the appropriate entities. Clearly, consideration of mechanical limits is already appropriately addressed in other standards which eliminates the need of this proposed revision to FAC-008.

The SAR also proposes additional clarification on “Jointly Owned” term, which also could be addressed in other forms without needing to revise the standard in forms such as developing a Reliability Guideline to focus entities on obtaining “a single most limiting data point” from its neighboring entities.

Likes 0

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer	No
Document Name	
Comment	
Minnesota Power agrees with MRO's NERC Standards Review Forum's (NSRF) comments.	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	No
Document Name	
Comment	
<p>More information is needed about the inclusion of mechanical equipment that would be included in the calculation of the Facility Ratings. An example of mechanical equipment should be included as well as the reasoning behind their inclusion in the development of the Facility Ratings. For example, is the STD looking to add the power plant turbines? If so, we do not see the link between the values of the assigned characteristics (e.g.: lines) versus the production of the turbines. Therefore, without this clarification we are unable to agree with the proposed scope of the SAR.</p> <p>The purpose of the FAC-008 standard is to produce electrical component Facility Ratings. The use of the defined term "Facility" limits the components that should be included within the FAC-008 standard to electrical equipment.</p> <p>The inclusion of mechanical equipment may have additional implications. A limit on the type of mechanical equipment that could be considered in the standard should be determined. Is the intent to limit the standard to the prime mover, or could pumps, compressors, and any other mechanical components at the facility be considered? It would be a significant regulatory burden to expand the FAC-008 standard in such a manner.</p> <p>Additionally, there is already a standard that accounts for the mechanical limitations of generation facilities. The MOD-025 standards purpose statement is "To ensure that accurate information on generator gross and net Real and Reactive Power capability and synchronous condenser Reactive Power capability is available for planning models used to assess Bulk Electric System (BES) reliability." This purpose statement is very close to the intended purpose of this SAR. Modification of FAC-008 as the SAR intends may create a potential double jeopardy situation as there will be two enforceable reliability standards for entities to provide the same generation capability information to the planning entities. If the standard is expanded as intended, an examination of this potentially harmful regulatory situation merits investigation.</p>	
Likes 0	
Dislikes 0	
Response	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	No

Document Name**Comment**

To move forward, the SAR needs more clarification and explanation regarding the issues at hand and the expected solutions, as it is not clear to ERCOT that the references to Facility and Element would not include all components of a generator – mechanical, electrical or otherwise. It is also not clear to ERCOT that there is any reasonable ambiguity with the phrase “jointly owned.” ERCOT supports clarity to ensure consistent interpretation across regions and entities, but upon review does not see a need for clarification at this time.

If this does move forward, ERCOT encourages this drafting effort to include ISO/RTO members from different regions as the information from these efforts is used by ISO/RTOs as NERC-registered RCs, PCs, and BAs. Generally, data and definitions should align with the needs of the ISO as the RC/PC/BA.

Likes 0

Dislikes 0

Response**Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC**

Answer

No

Document Name**Comment**

In the “Industry Need” section (page 1, Second paragraph) we recommend enhancing the first sentence to state: “Additionally, provide “jointly owned” clarification/definition, incorporation into the NERC Glossary of Terms, and appropriate NERC reliability standard formatting for the “jointly owned” terminology as referred to throughout FAC-008-5 requirements, and the level of individual component ratings that are required to be shared with other entities.” The second sentence is acceptable as written.

In the “Project Scope” section (page 2) we suggest adding an additional parameter: “1.a. The intent of the drafting team, when it achieves industry-wide consensus for “jointly owned” or “jointly owned generation” terminology (clarification/definition) is to incorporate it into the NERC Glossary of Terms.”

For the question “Are there any related standards or SARs that should be assessed for impact as a result of this proposed project?” (page 4 of the SAR), we suggest the project consider the following standards in addition to FAC-008-5 (FAC-008-3 can be removed now since it is retired) - FAC-002-3, IRO-010-3, MOD-025-2, MOD-032-2, TOP-003-4. All of these to some degree involve the GO and/or GOP providing generator related data to the TP, PC and System Operators. MOD-025-2 in particular requires Generator Owners to verify the Real Power and Reactive Power capabilities of their generating units and provide the information to their Transmission Planner. Doesn’t the MOD-025-2 standard allow for the consideration of mechanical related limitations? In NERC’s petition to FERC requesting approval of FAC-008-5 (dated 2/19/2021), MOD-032-1, IRO-010-2, and TOP-003-3 were specifically cited as justification for retiring FAC-008-3, Requirement R7. However, neither MOD-032-1, IRO-010-2 or TOP-003-3 use the term “Facility Rating” to describe an item of GO/GOP data needed by the PC/TP (MOD-032), RC (IRO-010), or BA/TOP (TOP-003). If a Facility Rating for a generator is synonymous with the generator’s Real Power and Reactive Power capabilities, the generation facility aspects of FAC-008 could be retired completely and MOD-025 revised to address the associated documentation required by the GO. FAC-008 could be renamed “Transmission Facility Ratings”.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer No

Document Name

Comment

MPC supports the MRO NERC Standards Review Forum comments.

Likes 0

Dislikes 0

Response

LaTroy Brumfield - American Transmission Company, LLC - 1

Answer No

Document Name

Comment

The scope of the SAR should be expanded beyond the current proposed scope:

Clarification around Requirement R6, specifically, where the standard clearly states, "Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings." The standard does not identify equipment ratings in the verbiage of Requirement R6.

The NERC GOT definition of Facility Rating contains the verbiage "a Facility Rating is 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." ATC's interpretation of this definition has always been that only the facility rating, defined by the most limiting piece of equipment, is in scope of FAC-008 R6, and no other equipment ratings. Having a methodology for all equipment is R3 which is not in question.

Clarification around the term "consistent" – it should be more clearly defined in the FAC-008 Reliability Standard.

Likes 0

Dislikes 0

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Lenise Kimes - City and County of San Francisco - 1 - WECC

Answer Yes

Document Name

Comment

The addition of mechanical elements is especially critical for hydrogeneration units considering the severe drought (D3 or D4 per the U.S. Drought Monitor) currently affecting the Western part of the United States. Several hydrogeneration plants (e.g. 644-MW Edward Hyatt Power Plant) had to be taken off-line or were close to being shut-down in CY 2020 due to the inability to draw enough water from the upstream reservoir. More importantly, before these units were taken off-line, they were totally incapable of producing the units' nameplate power rating and MVA due to insufficient head (e.g. Lake Mead was at 59-percent capacity in 2021 which severely affects Hoover Power Plant's power output). Based upon these facts, it's probably a good idea to include the mechanical elements a revision of FAC-008 since the mechanical elements can be the most limiting element in the system.

Likes 0

Dislikes 0

Response

Jennifer Malon - Black Hills Corporation - 1,3,5,6 - MRO,WECC

Answer Yes

Document Name

Comment

BHC agrees with the proposed scope as described in the SAR.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer Yes

Document Name	
Comment	
<p>BPA agrees in principle with the scope to clarify the term “jointly owned” and what information is required to be shared with neighboring entities.</p> <p>BPA recommends that “jointly owned” be defined in the NERC Glossary of Terms, not the Standard. BPA agrees that the information that is required to be shared should be documented within the Standard.</p> <p>BPA also agrees in principle with the inclusion of non-electrical equipment in the determination of GO Facility Ratings under R1. The NERC Glossary of Terms will need to be modified as the Glossary of Terms states “electrical”. The current NERC defined term for Facility is: 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.).</p>	
Likes	0
Dislikes	0
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
<p>Texas RE agrees with defining the phrase “jointly owned,” as well as clarifying which asset information and operations data are required to be shared between the Facilities to improve reliable BES operations.</p> <p>Texas RE notes the Project Scope section mentions “and what information is required to be shared.” The Industry Need section also references “the level of individual component ratings that are required to be shared with the other entity.” In order to better clarify the intent of the standard, it is important to understand the type of information that should be provided. This would facilitate mitigation of risk of Facility Rating gaps, coordination issues, and misunderstandings of Facility Rating shared Facility Ratings obligations.</p>	
Likes	0
Dislikes	0
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	

Likes 0

Dislikes 0

Response

Tammy Porter - Oncor Electric Delivery - 1 - Texas RE

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Anthony Jablonski - Anthony Jablonski - 10

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Richard Jackson - U.S. Bureau of Reclamation - 1,5

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
James Baldwin - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

2. Provide any additional comments for the SAR drafting team to consider, if desired

LaTroy Brumfield - American Transmission Company, LLC - 1

Answer

Document Name

Comment

NA

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports the MRO NERC Standards Review Forum comments.

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

The electric power industry would benefit from a "NERC FAC-008-5 Supplementary Reference & FAQ" document to address all the specific issues and concerns related to the NERC Facility Ratings reliability standard requirements, including all conceivable questions and answers the Project 2021-08 drafting team can compile. The supplementary reference for FAC-008 would be neither mandatory nor enforceable. An example of a successful document to model the FAC-008 Supplementary Reference & FAQ after, is the "PRC-005-6 Supplementary Reference & FAQ," Project 2007-17.4.

Likes 0

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer

Document Name

Comment

Minnesota Power agrees with MRO's NERC Standards Review Forum's (NSRF) comments.

Likes 0

Dislikes 0

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations

Answer

Document Name

Comment

Thank you for the opportunity to comment.

Likes 0

Dislikes 0

Response

Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF

Answer

Document Name

Comment

ITC supports the comments submitted by EEI

Likes 0

Dislikes 0

Response

Larry Watt - Lakeland Electric - 1,3,5,6**Answer****Document Name****Comment**

Lakeland Electric asserts that a) There are sources for all the data that planners and operators need – electrical ratings and plant gross and net real and reactive capability. b) The methodology for derivation of electrical ratings using FAC-008 is solid and has been trailed through the past ~14 years of mandatory compliance. c) There are already a multitude of data sources for planners to use to derive appropriate gross and net real and reactive unit capability, with improvements in process for MOD-025 – we do not need another source for this data and creating one would only add compliance burden for no reliability benefit. d) The reliability impact of a generator’s maximum capability is best handled by resource planners and not by transmission planning. In transmission planning, reliability impact if the accuracy of this number is diminished and other factors are more impactful. Thus again, the existing data sources that allow resource planners to assess different load serving scenarios are sufficient and do not require more thermal plant modelling nor more NERC standard requirements to achieve the desired outcomes.

Likes 0

Dislikes 0

Response**Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF****Answer****Document Name****Comment**

The NAGF has no additional comments.

Likes 0

Dislikes 0

Response**Martin Sidor - NRG - NRG Energy, Inc. - 5,6****Answer****Document Name****Comment**

For actual system and Generator Capability information, the MOD suite of standards including MOD-025 provides the best information. Market-based capability testing is also very useful. These are already used by planners and operators from an actual production and modeling standpoint.

Facility Rating is generally understood to be the capability of the electrical equipment used by entities to help identify design limitations of the BES.

NRG recommends removing the "jointly owned" designation of facilities and more clearly define the division of responsibilities of the GO and TO around the Point of Interconnection.

Likes 0

Dislikes 0

Response

David Jendras - Ameren - Ameren Services - 1,3,6

Answer

Document Name

Comment

Ameren agrees with and supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

Response

Daniel Gacek - Exelon - 1,3,5,6

Answer

Document Name

Comment

Exelon concurs with the EEI comments to this question.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

- The MRO NSRF requests if this SAR is not approved, NERC issue a Lessons Learned (guidance) on the risks associated with non-electrical elements within a Facility Ratings Methodology.
- If the SAR proceeds non-electrical components should be deleted as MOD-025-2 already addresses generator limits including mechanical limits.
- If the SAR proceeds the scope of changes should be very narrow and targeted to clarify just joint Facilities and allowing for mechanical limits as an option, not a mandatory requirement.
- If FAC-008 proceed, the MRO NSRF suggests the SDT consider limiting the scope of Generator Owners as generation elements are only approximately 10 – 20% of all BES Elements.
- The purpose of FAC-008 remains the same over several versions, determination of electrical ratings for the reliability planning and operation of the BES.
- Other NERC standards already allow the collection of generator electrical ratings such as MOD-025, MOD-026, MOD-027, MOD-032, TOP-003 and IRO-010.

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Quebec Production - 1,5

Answer

Document Name

Comment

No other comments

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name**Comment**

Texas RE encourages the drafting team to examine how the Facility Ratings are provided to the BAs, RCs, and TOPs for the development of SOLs and IROLs. The contingencies should be understood.

The SAR states that an idea for addressing the objectives is to create “implementation compliance guidance similar to the ‘CIP-002-5.1a R1 Shared Ownership of BES Facilities (CIPC)’ implementation guidance.” This CIPC Implementation Guidance uses similar terms to “jointly owned”: joint ownership, shared facility, shared ownership, and tenant. Texas RE recommends the SDT and NERC ensure that terms are consistent throughout ERO Enterprise documents. Furthermore, Texas RE recommends the SDT follow ERO Enterprise approved process, which includes a development aid for pre-qualified organizations, if its elects a potential solution to develop Implementation Guidance.

Likes 0

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer**Document Name****Comment**

FirstEnergy supports the comments submitted by the Edison Electric Institute (EEI)

Likes 0

Dislikes 0

Response

Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6

Answer**Document Name****Comment**

AZPS disagrees that there is not a clear understanding of the defined terms “Facility,” “Element,” or the undefined term “jointly owned.” We also do not support the development of a new defined term “Generation Facility.” Generating unit capability and associated resource limitations are reported by GOs and GOPs through TOP-003. The Real Power Capacity. In addition, the stated industry need for the SAR is “to produce generator owner facility rating that accurately reflect the real power capability of [generating] facility” which is the purpose of MOD-025-2.

Likes 0

Dislikes 0

Response

Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy

Answer

Document Name

Comment

None.

Likes 0

Dislikes 0

Response

Richard Jackson - U.S. Bureau of Reclamation - 1,5

Answer

Document Name

Comment

Reclamation supports the proposed clarifications due to varying interpretations by regional entities. Specifically, WECC has interpreted “jointly owned” to mean an entity must provide Facility Ratings on components owned by its neighboring entity to which the entity connects, rather than equipment to which title is shared by two entities.

Likes 0

Dislikes 0

Response

Robert Hirschak - Cleco Corporation - 1,3,5,6

Answer

Document Name

Comment

None.

Likes 0

Dislikes 0

Response	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments	
Answer	
Document Name	
Comment	
PG&E agrees with the Edison Electric Institute (EEI) comments that the SAR should not be pursued. PG&E believes there is a clear understanding of the defined terms “Facility,” “Element,” and the undefined term “jointly owned.” PG&E also indicates our successful interpretation of “jointly-owned” uses the ERO approved guidance, “Midwest Reliability Organization Standard Application” to further indicate the premise of the SAR is not required.	
Likes 0	
Dislikes 0	
Response	
LaKenya VanNorman - Florida Municipal Power Agency - 3,4,5,6 - SERC	
Answer	
Document Name	
Comment	
FMPA asserts that a) There are sources for all the data that planners and operators need – electrical ratings and plant gross and net real and reactive capability. b) The methodology for derivation of electrical ratings using FAC-008 is solid and has been trailed through the past ~14 years of mandatory compliance. c) There are already a multitude of data sources for planners to use to derive appropriate gross and net real and reactive unit capability, with improvements in process for MOD-025 – we do not need another source for this data and creating one would only add compliance burden for no reliability benefit. d) The reliability impact of a generator’s maximum capability is best handled by resource planners and not by transmission planning. In transmission planning, reliability impact if the accuracy of this number is diminished and other factors are more impactful. Thus again, the existing data	

sources that allow resource planners to assess different load serving scenarios are sufficient and do not require more thermal plant modelling nor more NERC standard requirements to achieve the desired outcomes.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

Document Name

Comment

- The definition for “Jointly Owned” needs to be defined in the NERC Glossary of Terms, not the standard.
- One of the suggested fixes for defining a facility (4b) is in conflict with the WECC definition of “breaker to breaker”. Facility ratings cannot be done at a ‘single physical location’ for transmission assets. BPA disagrees with creating a ‘Standard only’ definition section.
- BPA suggests the SAR drafting team review the RRO’s interpretations of “jointly owned” and the definition of “Facility” (in respect to consensus building activities).
- Under the Requested Information Section, BPA believes that Transmission systems also have the potential to be limited by electrical AND mechanical components, not just Generators.
- BPA recommends that the SAR drafting team be balanced between SMEs from both the Generation and Transmission perspective to ensure reliable planning and operations of the BES.

Likes 0

Dislikes 0

Response

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer

Document Name

Comment

Thank you for the opportunity to comment.

Likes 0

Dislikes 0

Response

Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company

Answer

As an alternative to the current SAR, the project team should consider making the following change to FAC-008: removing GO responsibilities entirely from the standard. The justification and basis for this proposition follows.

FAC-008 and Generator Operators:

It is proposed that there is no reliability value of applying FAC-008 to GOs at all. There are three main reasons that there is no reliability value: 1) There are no emergency overloading levels applied at radially connected generating stations, so the overloading of this type of circuit configuration is not an issue. 2) Since the ratification of FAC-008 on 06/18/2007, Southern Company has received zero requests for GO ratings from RC's, PC's, TP's, TO's, and TOP's so it can be concluded that this information has no value to the other functions. 3) The **three main purposes** of the standard are accomplished for GOs by other standards:

- **Reliable planning of the BES** is accomplished using the GO information received by planning entities through MOD-025, MOD-026, MOD-027, and especially MOD-032.
- **Reliable operation of the BES** is accomplished by NERC Reliability Standards TOP-003 and IRO-010 which provide the TOP, BA, and RC with the ability to request whatever GO information they need to reliably operate the BES.
- **Determining System Operating Limits** is determined using generating plant information including availability, continuous MW production capability, possible MW derate conditions provided through TOP-003 and IRO-010 coupled with possible reactive power limitation issues communicated to the TOP as required by VAR-002.

Additional details for the three key points above:

1) Overloading

FAC-008 primarily exists to identify loading limits on the BES to prevent accidental overloading and grid infrastructure damage. Transmission lines are networked – there are many parallel paths for power flow. Changes to the network configuration (topology) due to line outages will cause the power to flow differently and may overload certain components if not monitored and corrected. The radially connected generating plant facilities have unidirectional, controlled power flow all of the time. Closed loop real and reactive power flow regulators are continuously active when the plant is running. The continuous rating values of the series equipment is the rating of the equipment. There are no emergency overloading levels applied at generating stations [at my company, as least], so the overloading of this radial circuit is not an issue. The methodology and compilation of the ratings of the radial (series connected) power circuit equipment required by FAC-008 for GOs simply becomes a compliance exercise for the GO. In effect, the development of the ratings tables for each facility is a design re-check.

2) Use of the ratings

The facility ratings developed from Requirement R6 of FAC-008 by the TO and GO can be requested by the associated RC, PC, TP, TO, and TOP. Since the ratification of FAC-008 on 06/18/2007, Southern Company has received zero requests for this information from those parties. NERC compliance monitoring engagements have been the only requests received for facility rating tables developed due to FAC-008. The conclusion here is that the GO FAC-008 ratings are of no use to the parties who can request them.

3) Purpose of the Standard

The purpose of the standard has been the same since version 2 was ratified in 2010:

Version	Purpose
---------	---------

FAC-008-1	To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.
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FAC-008-2 To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on technically sound principles. A Facility Rating is essential for the determination of System Operating Limits.

FAC-008-3 To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on technically sound principles. A Facility Rating is essential for the determination of System Operating Limits.

FAC-008-4 To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on technically sound principles. A Facility Rating is essential for the determination of System Operating Limits.

FAC-008-5 To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on technically sound principles. A Facility Rating is essential for the determination of System Operating Limits

- The main purposes are:
- 1) reliable planning of the BES
 - 2) reliable operation of the BES
 - 3) determining System Operating Limits

For #1, reliable planning of the BES can be accomplished using the GO information received by planning entities through the information received from MOD-025, MOD-026, MOD-027, and especially MOD-032. MOD-032 provides planning entities with the ability to request whatever information they need.

For #2, NERC Reliability Standards TOP-003 and IRO-010 provide the TOP, BA, and RC with the ability to request whatever GO information they need to reliably operate the BES.

System Operating Limits can be determined using generating plant information including availability, continuous MW production capability, possible MW derate conditions provided through TOP-003 and IRO-010 coupled with possible reactive power limitation issues communicated to the TOP as required by VAR-002. As mentioned previously, no requests have been received in the 14-year history of FAC-008, so it can be inferred that they are not universally being used to determine System Operating Limits, if at all.

Likes 0

Dislikes 0

Response

Nazra Gladu - Manitoba Hydro - 1,3,5,6

Answer

Document Name

Comment

Manitoba Hydro believes that the current FAC-008 standard does not have any reliability gaps.

Manitoba Hydro also believes that requirement R8 of the current FAC-008 standard correctly addressed the data sharing requirements for long-term and near-term planning.

Perhaps, additional compliance guidance may be required to address any NERC concerns.

Likes 0

Dislikes 0

Response

Jennifer Malon - Black Hills Corporation - 1,3,5,6 - MRO,WECC

Answer

Document Name

Comment

It is nonsensical to solely use electrical equipment ratings for generator facility ratings because the limiting factor is thermodynamic or mechanical capability. In facility design, electrical equipment starts with thermodynamic capability, and then has margin added to ensure that electrical equipment will never be the limiting factor. BHC feels a unit's actual rating should include any and all limiting factors that contribute/inhibit the actual realized capability of the unit.

Likes 0

Dislikes 0

Response

Anthony Jablonski - Anthony Jablonski - 10

Answer

Document Name

Comment

The SAR is asking for clarification to the standard which will ultimately improve the Reliability of the BES.

Likes 0

Dislikes 0

Response

“Comments received from Mark Gray – EEI

Question 1

Yes

No

Comments: EEI disagrees with the premise of this SAR, which seems to misinterpret the intent of FAC-008. We further note that NERC previously approved Implementation Guidance for this Reliability Standard and we see no ambiguity in this Standard or the approved Guidance. It appears the SAR seeks an interpretation, but a SAR is not a proper mechanism for seeking an interpretation or resolution of a possible compliance issue/concern. For these reasons, we do not agree that this SAR should be pursued. We additionally ask consideration to be given to the fact that, in the NERC Glossary of Terms, a Facility Rating is 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.” While non-electrical elements such as prime movers do factor into the overall rating of a generator, FAC-008 is intended to identify, under worst case conditions, the most limiting electrical Element of a Facility so that a reliable Facility Rating can be applied to that Facility in order to ensure it can be reliably operated under all operating conditions. That includes operating conditions that might push a resource beyond its rated capability for short periods of time to meet an emergency operating condition. It is for this reason that non-electrical element are not considered. For example, if the generating resource is derated due to a non-electrical element, the real Facility Rating may be understated resulting in a rating that does not identify the real emergency rating/capability of that Facility. Lastly, the capability (both real and reactive power) of individual generators, including non-electrical limitations are appropriately reported through other Reliability Standards such as MOD-025-2 and TOP-003-4. A Facility Rating developed through the sole use of electrical Elements will always provide operators and planners with the electrical limits of their Facilities, thereby allowing planners and operators to plan and operate those facilities reliably even under emergency conditions.

Question 2 – Additional Comments

Comments: EEI does not agree this SAR should be pursued given it is more likely to diminish reliability rather than improve it. EEI disagrees that there is not a clear understanding of the defined terms “Facility,” “Element,” or the undefined term “jointly owned.” We also do not support the development of a new defined term “Generation Facility.” Generating unit capability and associated resource limitations are reported by GOs and GOPs through MOD-025-2 and TOP-003-4.

“Comments received from Ruida Shu – NPCC

Question 1

Yes

No

Comments:

More information is needed about the inclusion of mechanical equipment that would be included in the calculation of the Facility Ratings. An example of mechanical equipment should be included as well as the reasoning behind their inclusion in the development of the Facility Ratings. For example, is the STD looking to add the power plant turbines? If so, we do not see the link between the values of the assigned characteristics (e.g.: lines) versus the production of the turbines. Therefore, without this clarification we are unable to agree with the proposed scope of the SAR.

The purpose of the FAC-008 standard is to produce electrical component Facility Ratings. The use of the defined term "Facility" limits the components that should be included within the FAC-008 standard to electrical equipment.

The inclusion of mechanical equipment may have additional implications. A limit on the type of mechanical equipment that could be considered in the standard should be determined. Is the intent to limit the standard to the prime mover, or could pumps, compressors, and any other mechanical components at the facility be considered? It would be a significant regulatory burden to expand the FAC-008 standard in such a manner.

Additionally, there is already a standard that accounts for the mechanical limitations of generation facilities. The MOD-025 standards purpose statement is "To ensure that accurate information on generator gross and net Real and Reactive Power capability and synchronous condenser Reactive Power capability is available for planning models used to assess Bulk Electric System (BES) reliability." This purpose statement is very close to the intended purpose of this SAR. Modification of FAC-008 as the SAR intends may create a potential double jeopardy situation as there will be two enforceable reliability standards for entities to provide the same generation capability information to the planning entities. If the standard is expanded as intended, an examination of this potentially harmful regulatory situation merits investigation.

In addition to the proposed scope, the Standard Drafting Team should also consider expanding it to review and address the scope of other equipment covered within FAC-008, including recommendations from CCC- FRTF.