

Unofficial Comment Form for Facility Ratings — Project 2009-06

Please **DO NOT** use this comment form. Please use the [electronic form](#) located at the link below to submit comments on the SAR and proposed revisions to FAC-008 — Facility Ratings. Comments must be submitted by **September 9, 2009**. If you have questions, please contact Stephen Crutchfield at stephen.crutchfield@nerc.net or by telephone at 609-651-9455.

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

Background Information:

The requestors are members of the drafting team that had been working on revisions to FAC-008-1 and FAC-009-1 that resulted in a failed ballot in December 2008. The team had been working to modify FAC-008-1 and FAC-009-1 to merge the two standards into a single standard, to add Violation Risk Factors, Time Horizons, and Violation Severity Levels, and to address two of the three directives for FAC-008-1 in Order 693. An expanded discussion of these directives is elsewhere in this document.

Responders' comments in the first posting of this SAR appeared to achieve consensus on addressing these two FERC directives. However, in the course of responding to the draft SAR, several Generator Owners commented that the Generator Owner requirements were unnecessary, onerous, and/or duplicative to other Standards – including MOD-024 and MOD-025, as well as other standards.

The purpose of FAC-008 is 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." (Emphasis added.) 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). That is, the SDT believes that the Generator Owner's Facility Ratings, which are used in the reliable planning and operation of the BES, must be based on technically sound principles. Therefore appropriate requirements to document the basis for the Generator Owner's ratings must be included in FAC-008. While existing FERC approved standards (ex: FAC-001 and MOD-010) require the Generator Owner to provide certain plant data and ratings information, none require the Generator Owner to demonstrate the documented basis for these ratings. Thus, the FAC-008 requirements are not redundant to other FERC approved standards. Once MOD-024 and MOD-025 validation processes reach industry consensus and are approved by FERC, these could be used to demonstrate a satisfactory basis for MW and MVAR ratings under FAC-008. In fact, Requirement R1, Part 1.1.2 in the revised proposed draft standard allows these types of processes to be used in the interim, provided these data are supplemented by appropriate engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner's nominal parameters.

To address apparent ambiguity for Generator Owners in the prior draft standard version, the SDT is proposing Requirements R1 and R2 to address Facility Ratings for Generator Owners

– allowing (but not requiring) that generating unit Facilities be treated as a “black-box” to determine the Facility Rating of the generating unit Facilities. The revised focus of the proposed Requirement R1 is on making sure the Generator Owner can demonstrate that its Facility Ratings are supported by the “documentation” normally developed and used in designing, constructing, and operating a power plant. This documentation includes ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or other information that demonstrates an established engineering practice having a successful implementation record (see proposed Requirement R1, Part 1.1.1.).

It also allows use of operational information such as commissioning test results, performance testing, or historical performance records, any of which may be supplemented by engineering analyses (see Requirement R1, Part 1.1.2). Proposed Requirement R1, Part 1.2 requires that this documentation support the objective that the determined Facility Ratings do not exceed the most limiting Equipment Rating of the generating unit Facility (of the ‘black-box’). 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). Examples are excitation equipment, generator bus conductors, breakers, and step-up transformers that limit a generating unit’s thermal output (MVA or MW + jMVAR) to a value less than the prime mover’s MW rating and/or the electrical generator’s MVA rating.

Requirement R1 also 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.

The SDT believes, and that opinion has been supported by previous industry responders, that all Facilities must be ‘rated’ and the rating of each Facility is the responsibility of the respective Owner. Requirement R2 is intended to address the presumably few incidents, where the Generator Owner owns Transmission Facilities beyond the generator step-up transformer to the transmission switchyard. Requirement R2 addresses the Facility Ratings not addressed by Requirement R1, and not owned by the corresponding Transmission Owner. The SDT believes that for the vast majority of generating unit Facilities, the tasks involved in meeting the expectation of Requirement R2 are negligible (if the point of interconnection is, for example, the high side of the generator step-up transformer, and the Generator Owner also chooses this point as allowed in Requirement R1) or very minor – perhaps only covering the conductors between the high-side of the generator step-up transformer and the switchyard owned by the Transmission Owner. However, if the Generator Owner owns, for example, the adjacent switchyard through which ‘bi-directional Transmission flows’ may appear, then the rating obligation for the switchyard Facilities is analogous to the Transmission Owner Facilities addressed in Requirement R3.

The SDT believes that this version of the draft SAR removes the ambiguity that some believe placed an onerous and unnecessary burden on the Generator Owner, and the requirements of FAC-008 (as contained in the attached draft) are compatible with the MOD-024 and MOD-025 and other standards. In addition, the current draft standard does require

the Generator Owner to develop and provide Facility Ratings at an accuracy level needed to be “used in the reliable planning and operation of the Bulk Electric System...”.

The Violation Severity Levels Standard Drafting Team (VSLDT) — Project 2007-23 has posted proposed Violation Severity Levels (VSLs) for FAC-008-1 and FAC-009-1. The SDT used the VSLs that the VSLDT developed for new requirements R4–R7 according to the mapping table below:

Old Standard	Old Requirement	New Standard	New Requirement
FAC-008-1	R2	FAC-008-2	R4
FAC-008-1	R3	FAC-008-2	R5
FAC-009-1	R1	FAC-008-2	R6
FAC-009-1	R2	FAC-008-2	R7

The SDT developed VSLs for new requirements R1-R3 in accordance with the VSL guidelines. The revised VSLs for R1-R3 are consistent with the VSLs developed for other FAC-008-2 requirements.

*Please use the [comment form](#) to submit your final responses to NERC.

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

- Yes
 No

Comments:

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.

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?

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.

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?

- Yes
 No

Comments:

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.

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...?"

Yes

No

- A. The location of the boundary of the Facility ("black-box") has no bearing on the reliability of the rating.

- 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.

- 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?

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, please suggest other or additional locations.

Yes

No

Comments:

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?

Yes

No

Comments:

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

Comments:

- 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. Additionally, FAC-008 R1 appears redundant with what is already required per MOD-024 and MOD-025, and should therefore be deleted.
- 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.
- 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.
- 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.
- 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.
- F. The reference to R2.1 in R3.2 should be changed to R3.1.
- G. In R7, recommend changing “as scheduled” to “as requested”.

