

The following pages contain all comments submitted with the 1st ballot of Phase III & IV generator capability standards. The comments are organized with Company Name in alphabetical order within each Industry Segment. Most of the comments were submitted with an affirmative ballot and appear to be suggestions for future enhancements.

Based on the comments received, the drafting team corrected three typographical errors in MOD-024 and MOD-025, but did not make any changes to the content of the standards.

If you feel that the drafting team overlooked your comments, 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 Director of Standards, Gerry Cauley at 609-452-8060 or at gerry.cauley@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

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

MOD-024 - Verification of Generator Gross and Net Real Power Capability

MOD-025 - Verification of Generator Gross and Net Reactive Power Capability

Summary Consideration: Most stakeholders approved of these standards as proposed. The drafting team correct the three typographical errors noted in the comments, but did not make any changes to the content of the standards. The drafting team fixed the typographical errors by:

- Removing the extra word, 'less' that appeared in Level Four non-compliance for MOD-024
- Removing the extra word, 'less' that appeared in Level Four non-compliance for MOD-025
- Removing the capitalization on the word 'Seasonal' in MOD-025 R1.5.1

Note that only eleven comments were submitted with a 'negative' ballot. All other comments were submitted with an affirmative ballot.

Company	Industry Segment	Balloter	Comment
Avista Corp. AVA	1	Scott James Kinney	Affirmative: The implementation date for standard MOD-024-1 should be changed to one year beyond NERC Board of Trustee adoption of the Standard to be consistent with most standards currently under development.
Response: The implementation plan was posted for comment and none of the commenters suggested moving the date forward to be a year beyond the BOT adoption date. MOD-024 is not new for most Regions.			
Manitoba Hydro	1	Robert George Coish	Affirmative: Requirement R1.3 should have parallel wording for methods so that "manufacturer data" and "engineering analysis" is included for both standards.
Response: These are deliberately different in MOD-024 and MOD-025. In MOD-025, there are many factors that can limit the reactive capability from what the manufacturer provides, thus making the manufacturer's data inappropriate.			
Nebraska Public Power District NPPD	1	Alan Boesch	Affirmative: Section 3.4 of stanards MOD-024-1 and MOD-025-1 have a typo. Remove the word "less" after 94%
Response: This was a typographical error and will be fixed.			
Sacramento Municipal Utility District SMUD	1	Dilip Mahendra	Affirmative: The effective date should be one year beyond the NERC Board's adoption of these Standards.
Response: The implementation plan was posted for comment and none of the commenters suggested moving the date forward to be a year beyond the BOT adoption date. MOD-024 is not new for most Regions.			
Sierra Pacific Power Co. - Transmission SPPC	1	Richard Joseph Salgo	Negative: Non compliance levels are too strict. A small utility with 15-20 units will be L4 non-compliant if they miss one unit.
Response: The RRO must identify criteria that exempts generators from complying with some or all of the requirements in both MOD-024 and MOD-025. Unit size is a potential exemption criteria.			

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Company	Industry Segment	Balloter	Comment
Transmission Agency of Northern California - TANC	1	Peter Mackin	Affirmative: TANC believes the initial effective dates of these two Standards should be one (1) year beyond NERC Board of Trustee adoption in order to give the Regions time to implement the required procedures.
Response: The implementation plan was posted for comment and none of the commenters suggested moving the date forward to be a year beyond the BOT adoption date. MOD-024 is not new for most Regions.			
Tri-State Generation and Transmission Association TSGT	1	Bruce Allen Sembrick	Affirmative: Effective date should be one (1) year beyond the NERC Board of Trustee adoption of this Standard.
Response: The implementation plan was posted for comment and none of the commenters suggested moving the date forward to be a year beyond the BOT adoption date. MOD-024 is not new for most Regions.			
Alberta Electric System Operator AESO	2	Anita Lee	Affirmative: It is not clear in MOD-024-1 R3 and MOD-025-1 R3 to whom the Generator Owner will report the information. It seems to imply that the GO will report to the RRO. We note that if that is the intent, then it is different from the current practice in Alberta where we, as the ISO of Alberta, currently report this information to the WECC on behalf of the GOs.
Response: The RRO will specify to whom the Generator Owner will report the information. The information can come from the Generator Owner, or the Generator Owner's designee. Note that if the Generator Owner does delegate this task, the Generator Owner is still responsible for the task.			
Midwest Reliability Organization	2	William J. Head	Affirmative: In MOD-024-1, delete the word "less" which follows 94% in D3.3.4. In MOD-025-1, delete the word "less" which follows 94% in D3.3.4.
Response: This was a typographical error and will be fixed.			
Western Electricity Coordinating Council	2	Louise McCarren	Affirmative: Effective dates should be one year beyond NERC Board of Trustee adoption of the standard. This is the wording used in many of the current standards under development.
Response: The implementation plan was posted for comment and none of the commenters suggested moving the date forward to be a year beyond the BOT adoption date. MOD-024 is not new for most Regions.			
Madison Gas and Electric Company MGE	3	Darl Shimko	Negative: 1. MOD-024-1, Section D.3: Severity of non-compliance should be based on the percentage of the generator owner's total generation capability comprised of units required to be verified, rather than on the percentage (number) of generating units. As such, capability of exempt units should not be included in the total generation capability for determining level of non-compliance. For units, the capability of which has not been verified, nameplate or design capability could be used in determining total generating capability of the generator owner.

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			<ol style="list-style-type: none"> 2. MOD-025-1, Section B.R1.5.1: The words “Seasonal Real Power” are capitalized, implying a defined term. However, such term is not defined in the glossary nor in this standard. 3. MOD-025-1, Section B.R1.5.1: The benefit of verifying maximum capability of generators to absorb VARs at seasonal real power generation capability is unclear, particularly if this standard applies to virtually all generators. For the vast majority of units, the need to absorb VARs occurs during low-load conditions, when unit real power production is below maximum capability and the unit’s ability to absorb VARs is greater. Therefore, the single datum for unit VAR absorption capability determined pursuant to this standard seems to be of little practical use, except for relatively few generators in a limited set of circumstances. 4. MOD-025-1, Section D.3: Severity of non-compliance should be based on the percentage of the generator owner’s total generation capability comprised of units required to be verified, rather than on the percentage (number) of generating units. Exempt units should be excluded from the total generation capability for determining level of non-compliance.
<p>Response:</p> <ol style="list-style-type: none"> 1. The RRO may identify criteria that exempts some generators from complying with these requirements. Unit size is a potential exemption criteria. 2. Seasonal should not be capitalized – this was a typographical error and will be corrected. 3. The need for a standard to address these requirements has already reached industry consensus. 4. If the RRO exempts a unit, then there is no non-compliance for that unit. 			
Oklahoma Gas and Electric	3	Gary Clear	<p>Negative: Provision for regional differences requiring only net versus gross, auxillary, and net should be included.</p>
<p>Response: If this standard is approved and later a Region needs an exemption from complying with the requirements in this standard because that Region wants to include requirements that are less stringent than those specified, then that Region needs to apply for a Regional Difference by submitting a SAR.</p>			
SDGE	3	Scott Nephi Peterson	<p>Affirmative: The effective date could be One year beyond NERC Board of Trustee adoption of standard.</p>
<p>Response: The implementation plan was posted for comment and none of the commenters suggested moving the date forward to be a year beyond the BOT adoption date. MOD-024 is not new for most Regions.</p>			
Wisconsin Electric Power Marketing	3	James Keller	<p>Negative: 1. Comments on MOD-024-1 Generator Real Power Capability R.1,R.2 reporting of</p>

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WEPM			<p>aux loads and reporting net and gross real power, which is more data than we report now - I would think just net data would be sufficient because transmission system modeling does not model auxiliary detail and therefore only net generation is needed. Gross and aux data reporting is either optional or not required at all.</p> <ol style="list-style-type: none"> 2. D.3 The levels of non compliance are at 2% increments, where a level 4 (worst) is at less than 94%. For owners with a few units (10 applicable units), failing to submit data for 1 unit could result in a level 4 non compliance which does not give a reasonable idea of the compliance magnitude. I would think a 5% increment would provide a better break down that would provide meaningful data a take in account the different numbers of units owned. 3. Comments on MOD-025-1 Generator Reactive Power Capability A.5 - I believe this effective date structure for requirement 3 is imposing a 5 year reporting period, with 20% of the unit data reported per year - but it is not really clear that that is what is being proposed, as reporting is generically stated in R3. 4. - clarify R.1,R.2 reporting of aux loads and reporting net and gross reactive power, issue is same as above. Additionally, the leading var operation is not normal for most units - I would add optional if the unit does not historically operate in this mode. 5. D.3 The levels of non compliance are at 2% increments, issue same as above
<p>Response:</p> <ol style="list-style-type: none"> 1. Industry consensus has already been reached on Requirements R1 and R2. While net is typically used for steady-state studies, the gross and aux data is typically needed for conducting dynamic studies. 2, 5. A small entity with relatively few units should be able to meet compliance because that owner has fewer data to verify. In addition, if the units are extremely small, the RRO may exempt those small units from compliance. 3. The intent was to require an additional 20% of the total number of the generator owner's units to be compliant each year until in 2012 every generator owner will have 100% of its units fully compliant. 4. Industry consensus has already been reached on Requirements R1 and R2. The intent is to find the maximum capability of the unit regardless of normal operating mode. 			
Madison Gas and Electric Company MGE	4	Joe Buch	<p>Negative:</p> <ol style="list-style-type: none"> 1. For MOD-024-1 the Levels of Non-Compliance for Generator Owners should be revised to reflect percentages of the owner's Gross MW generation, not the number of generator owner's units. A generator owner with 40 to 50 units who has not tested one unit will be a Level 1 non-compliance. The impact on reliability is substantially different if the one unit not tested is 50% of the owner's Gross MW

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			<p>generation versus 2% of the owner's Gross MW generation.</p> <ol style="list-style-type: none"> 2. Also, Requirement R1.5.1 requires this information by season. However the levels on non-compliance give no indication as to whether only one, some or all of the seasonal information is incomplete. 3. For MOD-025-1 requirement R1.5.1 indicates that the maximum gross and net Reactive Power capability (both lagging and leading) at Seasonal Real Power generating capabilities be verified. From a system reliability standpoint the need to verify generating units maximum capabilities to provide vars to the system for steady state models is understandable. However, I am having trouble understanding why the "maximum" capabilities for generating units to absorb vars is required. There is substantial difference in testing a units ability to absorb some vars versus testing to establish the maximum var absorption capability. Also, as written the standard implies that the reactive verification must be performed simultaneously with the Seasonal Real Power generating capabilities. The standard needs to be rewritten to clearly indicate that verification of the units maximum ability to generate vars at the maximum Seasonal Real Power generating capabilities does not require the real and reactive testing to be performed simultaneously. 4. For MOD-025-1 the phase in period starts in 2007 and increases in 20% increments until all units are covered by 1/1/12. The var testing of generating units is still in it's infancy, in particular the testing of older units. While still keeping the same phase in period I recommend that the first year be considered a field trial for the standard. Results of the field trial can then be used to improve the definition of the standards requirements. 5. Also as with MOD-024-1 above, the same rationale applies for the definitions of non-compliance. The levels should be defined based on the percentage of MW's provided, not the number of units.
<p>Response:</p> <ol style="list-style-type: none"> 1. The RRO may identify criteria that exempts some generators from complying with these requirements. Unit size is a potential exemption criteria. 2, 5 The Regional procedures need to specify the level of detail for reporting – and the levels of non-compliance are linked to following these procedures. If the procedures require reporting 3 seasons, then the compliance monitor would be looking for 3 seasons of data. 3. The need for a standard to address these requirements has already reached industry consensus. 4. Under the NERC Reliability Standards Process, field testing is done before stakeholders are asked to ballot the standards. The Director, Compliance and the Standards Authorization Committee reviewed these standards and determined that field testing is not required. 			

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Wisconsin Energy Corporation - PM WEC	4	Anthony Jankowski	<p>Negative:</p> <ol style="list-style-type: none"> 1. Comments on MOD-024-1 Generator Real Power Capability R.1,R.2 reporting of aux loads and reporting net and gross real power, which is more data than we report now - I would think just net data would be sufficient because transmission system modeling does not model auxiliary detail and therefore only net generation is needed. Gross and aux data reporting is either optional or not required at all. 2. D.3 The levels of non compliance are at 2% increments, where a level 4 (worst) is at less than 94%. For owners with a few units (10 applicable units), failing to submit data for 1 unit could result in a level 4 non compliance which does not give a reasonable idea of the compliance magnitude. I would think a 5% increment would provide a better break down that would provide meaningful data a take in account the different numbers of units owned. 3. Comments on MOD-025-1 Generator Reactive Power Capability A.5 - I believe this effective date structure for requirement 3 is imposing a 5 year reporting period, with 20% of the unit data reported per year - but it is not really clear that that is what is being proposed, as reporting is generically stated in R3. 4. - clarify R.1,R.2 reporting of aux loads and reporting net and gross reactive power, issue is same as above. 5. Additionally, the leading var operation is not normal for most units - I would add optional if the unit does not historically operate in this mode. 6. D.3 The levels of non compliance are at 2% increments, issue same as above
<p>Response:</p> <p>1,4. Industry consensus has already been reached on Requirements R1 and R2. While net is typically used for steady-state studies, the gross and aux data is typically needed for conducting dynamic studies.</p> <p>2, 4, 6. A small entity with relatively few units should be able to meet compliance because that owner has fewer data to verify. In addition, if the units are extremely small, the RRO may exempt those small units from compliance.</p> <p>3. The intent was to require an additional 20% of the total number of the generator owner's units to be compliant each year until in 2012 every generator owner will have 100% of its units fully compliant.</p> <p>5. The intent is to find the maximum capability of the unit regardless of normal operating mode.</p>			

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Avista Corp. Washington Water Power Division AVWP	5	Edward F. Groce	<p>Affirmative: The implementation date for standard MOD-024-1 should be changed to one year beyond NERC Board of Trustee adoption of the Standard to be consistent with most standards currently under development.</p>
<p>Response: The implementation plan was posted for comment and none of the commenters suggested moving the date forward to be a year beyond the BOT adoption date. MOD-024 is not new for most Regions.</p>			
City of Tallahassee TAL	5	Alan Gale	<p>Affirmative: I vote affirmative reluctantly. While I applaud the SDT's effort to address Southern Company Generations comments about a % completion for the different levels of Non-Compliance. By making it so stringent they have appeased the large companies with a large fleet, but penalized small companies with a small fleet. If I miss only 1 of my 10 generators, even a 10 MW 1954 vintage CT, I will be level 4 Non-Compliant. This standard will require careful consideration by each region to ensure a "fair and equitable" standard for all since the NERC standard appears biased towards large fleets.</p>
<p>Response: The RRO must identify criteria that exempts generators from complying with some or all of the requirements in both MOD-024 and MOD-025. Unit size and unit age are potential exemption criteria.</p>			
City Water Light & Power CWLP	5	Karl Kohlrus	<p>Negative: Levels of noncompliance unfairly penalize small systems. Instead of Level 1 being 98% compliant, it should be "1 generator did not comply", Level 2 should be "2 generators do not comply", Level 3 should be "3 generators do not comply", and Level 4 should be "4 or more generators do not comply". My system has 8 generators. If one generator does not comply, I would have a Level 4 violation, whereas a larger system would have no violation or a Level 1 violation.</p> <p>Also it is difficult or nearly impossible, as well as being impractical, to test maximum leading MVAR output at the time of maximum MW output.</p>
<p>Response: A small entity with relatively few units should be able to meet compliance because that owner has fewer data to verify. In addition, if the units are extremely small, the RRO may exempt those small units from compliance.</p> <p>System restrictions may limit the ability to test for the max leading MVAR output at the time of max MW output but engineering analysis and performance tracking can also be used to extrapolate data to determine the max leading MVAR output at the time of max MW output.</p>			
Dynergy Generation	5	Greg Mason	<p>Negative: 1. MOD-024-1 and MOD-025-1: In the most recent draft, the Levels of Non-Compliance were changed to address concerns of Generation Owners with large numbers of units. However, as revised, the new Levels of Non-Compliance unduly penalize Generation</p>

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			<p>Owners who have a small number of generators since they will likely default to Level 4 Non-Compliance due to data problems for only one unit. The Levels of Non-Compliance need to be modified to be a combination of %'s or number of units.</p> <p>2. MOD -025-1:R1.5.1 requires verification of Reactive Power capability at "Seasonal Real Power generating capabilities..." Existing Regional Guides generally require reactive power capability to be determined at maximum and minimum MW output levels. R1.5.1 should be revised to reflect this existing requirement rather than mandating reactive capability tests at a yet to be defined number and level of "Seasonal Real Power generating capabilities."</p>
<p>Response:</p> <p>1. A small entity with relatively few units should be able to meet compliance because that owner has fewer data to verify. In addition, if the units are extremely small, the RRO may exempt those small units from compliance.</p> <p>2. The standard wasn't developed to duplicate existing RRO guidelines – the standard was written to ensure that the data used in models is accurate.</p>			
Oklahoma Gas and Electric OKGE	5	Kim Morphis	<p>Negative:</p> <p>We believe that individual RRO's should have the option of only requiring net capability verification if they so choose. Gross capabilities may not be readily verifiable and may not have value to the regional RRO.</p>
<p>Response: While net is typically used for steady-state studies, the gross and aux data is typically needed for conducting dynamic studies. If this standard is approved and later a Region needs an exemption from complying with the requirements in this standard because that Region wants to include requirements that are less stringent than those specified, then that Region needs to apply for a Regional Difference by submitting a SAR.</p>			
Southern Company Services SOCO	5	Roger Green	<p>Affirmative:</p> <p>Proposed Comment on MOD-025-1: The Levels of Non-Compliance should be clearly linked to the phased implementation period. That is, for the 1st 20% compliance period each Level of Non-Compliance would apply to the first 20% of units. For the 2nd 20% compliance period, each Level of Non-Compliance to apply to the first 40% of units. And so on. This seems obvious to us, but felt that the standard itself may need to clarify this.</p>
<p>Response: Most stakeholders seemed to understand the association between the implementation plan and the levels of non-compliance. Your interpretation is correct.</p>			
Wisconsin Electric Power Company	5	Linda Horn	<p>Negative:</p> <p>1. Comments on MOD-024-1 Generator Real Power Capability R.1,R.2 reporting of aux loads and reporting net and gross real power, which is more data than we report now - I would think just net data would be sufficient because transmission system modeling does not model auxiliary detail and therefore only net generation is needed. Gross and aux data reporting is either optional or not required at all.</p>

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			<ol style="list-style-type: none"> 2. D.3 The levels of non compliance are at 2% increments, where a level 4 (worst) is at less than 94%. For owners with a few units (10 applicable units), failing to submit data for 1 unit could result in a level 4 non compliance which does not give a reasonable idea of the compliance magnitude. I would think a 5% increment would provide a better break down that would provide meaningful data to take in account the different numbers of units owned. 3. Comments on MOD-025-1 Generator Reactive Power Capability A.5 - I believe this effective date structure for requirement 3 is imposing a 5 year reporting period, with 20% of the unit data reported per year - but it is not really clear that that is what is being proposed, as reporting is generically stated in R3. 4. - clarify R.1,R.2 reporting of aux loads and reporting net and gross reactive power, issue is same as above. Additionally, the leading var operation is not normal for most units - I would add optional if the unit does not historically operate in this mode. 5. D.3 The levels of non compliance are at 2% increments, issue same as above
<p>Response:</p> <ol style="list-style-type: none"> 1. Industry consensus has already been reached on Requirements R1 and R2. While net is typically used for steady-state studies, the gross and aux data is typically needed for conducting dynamic studies. 2, 5. A small entity with relatively few units should be able to meet compliance because that owner has fewer data to verify. In addition, if the units are extremely small, the RRO may exempt those small units from compliance. 3. The intent was to require an additional 20% of the total number of the generator owner's units to be compliant each year until in 2012 every generator owner will have 100% of its units fully compliant. 4. Industry consensus has already been reached on Requirements R1 and R2. The intent is to find the maximum capability of the unit regardless of normal operating mode. 			
Siemens Power Generation	7	Benjamin Wiant	<p>Negative:</p> <p>These standards do not provide for uniform testing of generator capability. The determination of which units are tested, how frequently they are tested, and the criteria used for determining capability are left to individual regions. The terms "net capability" and "gross capability" are not precisely defined. Fundamental guidelines outlining some basic requirements (e.g. all units over 20 MW shall be tested annually under conditions that permit full net output of the unit for normal operation) are lacking.</p> <p>There is no clear reason for regional variations in capability testing. There is no fundamental difference between generators used in California, New Jersey, and Florida. Yet it seems likely that identical generators in different regions, using the same fuel and in the same</p>

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			<p>ambient conditions, would have different capabilities just by virtue of the regional testing criteria. Presently, identical Siemens generators have identical capabilities regardless of where they are applied. A generator in Georgia does not have more or less capability than an identical unit applied across the Florida line, despite the fact that one is in SERC and the other in FRCC. It seems likely that this would be true for other vendors. The result of the proposed standards would be to promote unnecessary diversity in determination of generator capability where it does not presently exist. It is hard to see how this promotes reliable operation of the BES. It would seem appropriate to have common, national guidelines for capability testing. Such guidelines could be developed with the cooperation of vendors (such as Siemens) if NERC chose to do this, either directly with FERC or with an equipment standard organization such as ANSI. This seems to be preferable to the scheme proposed, with each region determining its own testing standards.</p>
<p>Response: The standard allows the RRO to define acceptable methods of verification, only one of which is testing. The ambient conditions under peak conditions will result in different capabilities. Plants have different limitations. Environmental issues affect cooling water temperatures and consequently capabilities.</p>			
California Energy Commission	9	William Mitchell Chamberlain	<p>Affirmative: This standard has a proposed effective date of April 1, 2006, which was fine when it was drafted, but which is now very close to the adoption of the standard. I believe standards should have effective dates one year from the date when the standard is approved by the NERC Board. The problem is that in a number of cases where WECC members have asked for clarification of things such as what will be required to verify "sustainable gross and net real power capability" the answer provided by the Standards Drafting Team has been that individual Regional Procedures will be required to provide that clarity. That is not objectionable, but it will take time for the Regional Reliability Organizations to adopt such Regional Procedures. Thus as a general rule the Regions should be given a year from NERC Board adoption of a standard to develop any required Regional Procedures before the new standard takes effect. It is unlikely that this delay will produce any adverse consequences and the more orderly process may serve the cause of reliability.</p>
<p>Response: The implementation plan was posted for comment and none of the commenters suggested moving the date forward to be a year beyond the BOT adoption date. MOD-024 is not new for most Regions. A form of these standards is already in place as a result of the field testing conducted with Phase III Planning Standards.</p>			
Public Service Commission of South Carolina	9	Philip D. Riley	<p>Affirmative: The PSCSC must reiterate its view that the approach appears to be compliance-based rather than performance-based. Is the objective having procedures on hand, or a reliable system? The PSCSC maintains that the real objective is reliability, and not readily available procedures. The real measure of success is effective implementation of the procedures such that reliability is not compromised.</p>

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Response: Having the documentation is a first step in providing consistency in designing the Bulk Electric System. These standards also require compliance with the procedures with an aim at more accurate system models.
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