

**Reliability Standard Audit Worksheet[[1]](#footnote-1)**

MOD-026-1 – Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions

***This section to be completed by the Compliance Enforcement Authority.***

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| **Audit ID:** | Audit ID if available; or REG-NCRnnnnn-YYYYMMDD |
| **Registered Entity:**  | Registered name of entity being audited |
| **NCR Number:**  | NCR###### |
|  **Compliance Enforcement Authority:** | Region or NERC performing audit |
| **Compliance Assessment Date(s)[[2]](#footnote-2):** | Month DD, YYYY, to Month DD, YYYY |
| **Compliance Monitoring Method:**  | [On-site Audit | Off-site Audit | Spot Check] |
| **Names of Auditors:**  | Supplied by CEA |

# **Applicability of Requirements**

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| **R1** |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |
| **R2** |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| **R3** |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| **R4** |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| **R5** |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| **R6** |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |

**Legend:**

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| Text with blue background: | Fixed text – do not edit |
| Text entry area with Green background: | Entity-supplied information |
| Text entry area with white background: | Auditor-supplied information |

Findings

**(This section to be completed by the Compliance Enforcement Authority)**

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| **Req.** | **Finding** | **Summary and Documentation** | **Functions Monitored** |
| **R1** |  |  |  |
| **R2** |  |  |  |
| **R3** |  |  |  |
| **R4** |  |  |  |
| **R5** |  |  |  |
| **R6** |  |  |  |

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| **Req.** | **Areas of Concern** |
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| **Req.** | **Recommendations** |
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| **Req.** | **Positive Observations** |
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Effective Dates

United States

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| Standard | Requirement | Effective Dates | Applicable % unit gross MVA |
| MOD-026-1 | R1. | 07/01/2014 |  |
| MOD-026-1 | R2. | 07/01/2018 |  30% |
| MOD-026-1 | R2. | 07/01/2020 |  50% |
| MOD-026-1 | R2. | 07/01/2024 | 100% |
| MOD-026-1 | R3. | 07/01/2014 |  |
| MOD-026-1 | R4. | 07/01/2014 |  |
| MOD-026-1 | R5. | 07/01/2014 |  |
| MOD-026-1 | R6. | 07/01/2014 |  |

Applicability

 **4.1. Functional Entities**:

**4.1.1** Generator Owner

**4.1.2** Transmission Planner

**4.2. Facilities:**

For the purpose of the requirements contained herein, Facilities that are directly connected to the Bulk Electric System (BES) will be collectively referred as an “applicable unit” that meet the following:

**4.2.1** Generation in the Eastern or Quebec Interconnections with the following characteristics:

**4.2.1.1** Individual generating unit greater than 100 MVA (gross nameplate rating).

**4.2.1.2** Individual generating plant consisting of multiple generating units that are directly connected at a common BES bus with total generation greater than 100 MVA (gross aggregate nameplate rating).

**4.2.2** Generation in the Western Interconnection with the following characteristics:

**4.2.2.1** Individual generating unit greater than 75 MVA (gross nameplate rating).

**4.2.2.2** Individual generating plant consisting of multiple generating units that are directly connected at a common BES bus with total generation greater than 75 MVA (gross aggregate nameplate rating).

**4.2.3** Generation in the ERCOT Interconnection with the following characteristics:

 **4.2.3.1** Individual generating unit greater than 50 MVA (gross nameplate rating).

 **4.2.3.2** Individual generating plant consisting of multiple generating units that are directly connected at a common BES bus with total generation greater than 75 MVA (gross aggregate nameplate rating).

**4.2.4** For all Interconnections:

• A technically justified [[3]](#footnote-3)unit that meets NERC registry criteria but is not otherwise included in the above Applicability sections 4.2.1, 4.2.2, or 4.2.3 and is requested by the Transmission Planner.

Subject Matter Experts

Identify the Subject Matter Expert(s) responsible for this Reliability Standard.

**Registered Entity Response (Required; Insert additional rows if needed):**

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| **SME Name** | **Title** | **Organization** | **Requirement(s)** |
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R1 Supporting Evidence and Documentation

1. Each Transmission Planner shall provide the following requested information to the Generator Owner within 90 calendar days of receiving a written request:
* Instructions on how to obtain the list of excitation control system or plant volt/var control function models that are acceptable to the Transmission Planner for use in dynamic simulation,
* Instructions on how to obtain the dynamic excitation control system or plant volt/var control function model library block diagrams and/or data sheets for models that are acceptable to the Transmission Planner, or
* Model data for any of the Generator Owner’s existing applicable unit specific excitation control system or plant volt/var control function contained in the Transmission Planner’s dynamic database from the current (in-use) models, including generator MVA base.
1. The Transmission Planner must have and provide the dated request for instructions or data, the transmitted instructions or data, and dated evidence of a written transmittal (e.g., electronic mail message, postal receipt, or confirmation of facsimile) as evidence that it provided the request within 90 calendar days in accordance with Requirement R1.

**Registered Entity Response (Required):**

**Question:** Did the entity receive a written request from a Generator Owner to provide instructions or model data as specified in R1 during the compliance monitoring period? [ ]  Yes [ ]  No

If Yes, provide a list of the requests and provide evidence of compliance.

If No, how was the determination of no requests received ascertained?

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

**Registered Entity Response (Required):**

**Compliance Narrative:**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to MOD-026-1, R1

***This section to be completed by the Compliance Enforcement Authority***

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|  | Review the list of requests from each Generator Owner for instructions on the provision of applicable generator excitation or volt/var control modeling data. |
|  | Verify the entity provided the following generator data modeling instructions to the Generator Owners on the list: |
|  | * Instructions on how to obtain the list of excitation control system or plant volt/var control function models that are acceptable to the Transmission Planner for use in dynamic simulation,
 |
|  | * Instructions on how to obtain the dynamic excitation control system or plant volt/var control function model library block diagrams and/or data sheets for models that are acceptable to the Transmission Planner, or
 |
|  | * Model data for any of the Generator Owner’s existing applicable unit specific excitation control system or plant volt/var control function contained in the Transmission Planner’s dynamic database from the current (in-use) models, including generator MVA base.
 |
|  | Verify the response was provided within 90 calendar days |
| **Note to Auditor:** Effective date of R1 is 7/1/14. Verify there is a response for applicable generator owner requests within 90 days and that the response is specific regarding the modeling data instructions required by the Transmission Planner. |

Auditor Notes:

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R2 Supporting Evidence and Documentation

1. Each Generator Owner shall provide for each applicable unit, a verified generator excitation control system or plant volt/var control function model, including documentation and data (as specified in Part 2.1) to its Transmission Planner in accordance with the periodicity specified in MOD-026 Attachment 1.
	1. Each applicable unit’s model shall be verified by the Generator Owner using one or more models acceptable to the Transmission Planner. Verification for individual units less than 20 MVA (gross nameplate rating) in a generating plant (per Section 4.2.1.2, 4.2.2.2, or 4.2.3.2) may be performed using either individual unit or aggregate unit model(s), or both. Each verification shall include the following:
		1. Documentation demonstrating the applicable unit’s model response matches the recorded response for a voltage excursion from either a staged test or a measured system disturbance,
		2. Manufacturer, model number (if available), and type of the excitation control system including, but not limited to static, AC brushless, DC rotating, and/or the plant volt/var control function (if installed),
		3. Model structure and data including, but not limited to reactance, time constants, saturation factors, total rotational inertia, or equivalent data for the generator,
		4. Model structure and data for the excitation control system, including the closed loop voltage regulator if a closed loop voltage regulator is installed or the model structure and data for the plant volt/var control function system,
		5. Compensation settings (such as droop, line drop, differential compensation), if used, and
		6. Model structure and data for power system stabilizer, if so equipped.
2. The Generator Owner must have and provide dated evidence it verified each generator excitation control system or plant volt/var control function model according to Part 2.1 for each applicable unit and a dated transmittal (e.g., electronic mail message, postal receipt, or confirmation of facsimile) as evidence it provided the model, documentation, and data to its Transmission Planner, in accordance with Requirement R2.

**Registered Entity Response (Required):**

**Question:** Does the entity own applicable units per Applicability Section 4.2? [ ]  Yes [ ]  No

If Yes, provide a list of applicable units gross MVA for each Interconnection.

If No, how was the determination of applicable units ascertained?

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

**Registered Entity Response (Required):**

**Compliance Narrative:**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to MOD-026-1, R2

***This section to be completed by the Compliance Enforcement Authority***

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|  | Establish that the entity provided for each applicable unit, a verified excitation control system or plant volt/var control function model to its Transmission Planner. Verify the model data includes the following requirements: |
|  | * Verify the entity provided the verified control models, documentation, and data to the Transmission Planner in accordance with the periodicity in MOD-026 Attachment 1.
 |
|  | * (R2.1) Each applicable unit’s model shall be verified by the Generator Owner using one or more models acceptable to the Transmission Planner.
 |
|  | * (R2.1) Verification for individual units less than 20 MVA (per Applicability section 4.2.1.2, 4.2.2.2 or 4.2.3.2) may be performed using either individual unit or aggregate unit model(s), or both,
 |
|  | * (R2.1.1) Documentation demonstrating the applicable unit’s model response matches the recorded response for a voltage excursion from either a staged test or a measured system disturbance,
* (R2.1.2) Manufacturer, model number (if available), and type of the excitation control system including, but not limited to static, AC brushless, DC rotating, and/or the plant volt/var control function (if installed),
 |
|  | * (R2.1.3) Model structure and data including, but not limited to reactance, time constants, saturation factors, total rotational inertia, or equivalent data for the generator,
 |
|  | * (R2.1.4) Model structure and data for the excitation control system, including the closed loop voltage regulator if a closed loop voltage regulator is installed or the model structure and data for the plant volt/var control function system,
 |
|  | * (R2.1.5) Compensation settings (such as droop, line drop, differential compensation), if used, and
 |
|  | * (R2.1.6) Model structure and data for power system stabilizer, if so equipped.
 |
| **Note to Auditor:** Auditor must confirm applicable generator units for model verification are accurate per the applicability section. The effective date for R2 is based on the Standard Effective Date section 5.2-5.4. The effective date of Requirement 2 provides a 10 year phase-in for compliance for applicable generation units. Specifically 30% of the entity’s applicable unit gross MVA for each Interconnection shall be compliant by July 1, 2018, 50% by July 1, 2020 and 100% by July 1, 2024. See Attachment 1 Model Verification Periodicity Table in the Additional Information Section of the Standard. MOD-026 Attachment 1: Excitation Control System or Plan Volt/Var Functional Model Verification Periodicity includes the following titled, Note 2: Consideration for Early Compliance:Existing excitation control system and plant volt/var control model verification is sufficient for demonstrating compliance for a 10 year period from the actual transmittal date if either of the following applies: • The Generator Owner has a verified model that is compliant with the applicable regional entity policies, guidelines or criteria existing at the time of model verification, or • The Generator Owner has an existing verified model that is compliant with the requirements of this Standard. Verification of units rated less than 20 MVA in a plant connected at a common BES bus with total generation greater than 75 MVA, may be performed using either individual unit or aggregate unit model(s) or both per R2.1 |

Auditor Notes:

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R3 Supporting Evidence and Documentation

1. Each Generator Owner shall provide a written response to its Transmission Planner within 90 calendar days of receiving one of the following items for an applicable unit:
* Written notification from its Transmission Planner (in accordance with Requirement R6) that the excitation control system or plant volt/var control function model is not usable,
* Written comments from its Transmission Planner identifying technical concerns with the verification documentation related to the excitation control system or plant volt/var control function model, or
* Written comments and supporting evidence from its Transmission Planner indicating that the simulated excitation control system or plant volt/var control function model response did not match the recorded response to a transmission system event.

The written response shall contain either the technical basis for maintaining the current model, the model changes, or a plan to perform model verification[[4]](#footnote-4) (in accordance with Requirement R2).

1. Evidence for Requirement R3 must include the Generator Owner’s dated written response containing the information identified in Requirement R3 and dated evidence of transmittal (e.g., electronic mail message, postal receipt, or confirmation of facsimile) of the response.

**Registered Entity Response (Required):**

**Question:** Did the entity receive written notification or comments from its Transmission Planner regarding model verification issues identified in R3 for an applicable unit in the compliance monitoring period?

 [ ]  Yes [ ]  No

If Yes, provide a list of such notification or comments and evidence to demonstrate compliance.

If No, how was the determination of not receiving notifications or comments from its Transmission Planner ascertained?

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

**Registered Entity Response (Required):**

**Compliance Narrative:**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to MOD-026-1, R3

***This section to be completed by the Compliance Enforcement Authority***

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|  | Review the response to the Question, if the response is Yes, then: |
|  | Verify the entity provided a written response to its Transmission Planner regarding one of the following items for an applicable unit: |
|  | * Written notification from its Transmission Planner (in accordance with Requirement R6) that the excitation control system or plant volt/var control function model is not usable,
 |
|  | * Written comments from its Transmission Planner identifying technical concerns with the verification documentation related to the excitation control system or plant volt/var control function model, or
 |
|  | * Written comments and supporting evidence from its Transmission Planner indicating that the simulated excitation control system or plant volt/var control function model response did not match the recorded response to a transmission system event.
 |
|  | * Verify the response was provided within 90 calendar days
 |
|  | Verify the written response contains: |
|  | * The technical basis for maintaining the current model
 |
|  | * The model changes, or
 |
|  | * A plan to perform model verification in accordance with R2.
 |
| **Note to Auditor:** Effective date of R3 is 7/1/14. See footnote 4 regarding resetting the 10-year clock on model verification per Attachment 1 periodicity. R3 applies only to the notifications or comments received dealing with one of the three bulleted topics. Notifications or comments received on topics unrelated to the bulleted items do not apply under R3. |

Auditor Notes:

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R4 Supporting Evidence and Documentation

**R4**. Each Generator Owner shall provide revised model data or plans to perform model verification[[5]](#footnote-5) (in accordance with Requirement R2) for an applicable unit to its Transmission Planner within 180 calendar days of making changes to the excitation control system or plant volt/var control function that alter the equipment response characteristic.[[6]](#footnote-6)

1. Evidence for Requirement R4 must include, for each of the Generator Owner’s applicable units for which system changes specified in Requirement R4 were made, a dated revised model data or plans to perform a model verification and dated evidence (e.g., electronic mail message, postal receipt, or confirmation of facsimile) it provided the revised model and data or plans within 180 calendar days of making changes.

**Registered Entity Response (Required):**

**Question:** Did the entity make changes to the excitation control system or plan volt/var control function that altered the equipment response characteristic for applicable units during the compliance monitoring period?

[ ]  Yes [ ]  No

If Yes, provide a list of the changes as evidence of compliance.

If No, how was the determination made that no changes occurred that altered the equipment response characteristic?

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

**Registered Entity Response (Required):**

**Compliance Narrative:**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Compliance Assessment Approach Specific to MOD-026-1, R4

***This section to be completed by the Compliance Enforcement Authority***

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|  | Review the response to the Question, if the response was Yes, then: |
|  | Verify the Generator Owner provided dated revised model data or plans to perform a model verification for applicable units (in accordance with R2) when system changes specified in R4 were made. |
|  | Verify the Generator Owner provided the revised model or plans to perform model verification to its Transmission Planner within 180 calendar days of making changes specified in R4. |
| **Note to Auditor:** Effective date of R4 is 7/1/14. See footnote 6 regarding guidance on applicable changes. Per FERC Order 796 P14, Under Requirement R4, generator owners are required to determine whether changes to applicable units affect models provided pursuant to Requirement R2 and, when consistent with this determination, to provide the transmission planner with revised model data or plans to perform model verification. See footnote 4 regarding resetting the 10-year clock on model verification per Attachment 1 periodicity. |

Auditor Notes:

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R5 Supporting Evidence and Documentation

1. Each Generator Owner shall provide a written response to its Transmission Planner, within 90 calendar days following receipt of a technically justified[[7]](#footnote-7) unit request from the Transmission Planner to perform a model review of a unit or plant that includes one of the following:
* Details of plans to verify the model (in accordance with Requirement R2), or
* Corrected model data including the source of revised model data such as discovery of manufacturer test values to replace generic model data or updating of data parameters based on an on-site review of the equipment.
1. Evidence for Requirement R5 must include the Generator Owner’s dated written response containing the information identified in Requirement R5 and dated evidence (e.g., electronic mail message, postal receipt, or confirmation of facsimile) it provided a written response within 90 calendar days following receipt of a technically justified request.

**Question:** Did the entity receive a request from its Transmission Planner as specified in R5 during the compliance monitoring period?

[ ]  Yes [ ]  No

If Yes, provide a list of the requests and evidence of compliance.

If No, how was the determination made that no requests were received as specified in R5?

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

**Registered Entity Response (Required):**

**Compliance Narrative:**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Compliance Assessment Approach Specific to MOD-026-1, R5

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|  | Review the response to the Question, if the response was Yes, then: |
|  | Verify the Entity received a dated technically justified request from the Transmission Planner to perform a model review as specified in R5. |
|  | Verify the Entity provided the written response to its Transmission Planner containing the following information: |
|  | * Details of plans to verify the model (in accordance with Requirement R2), or
 |
|  | * Corrected model data including the source of revised model data such as discovery of manufacturer test values to replace generic model data or updating of data parameters based on an on-site review of the equipment.
 |
|  | * Verify the response was provided within 90 calendar days of receipt of the request.
 |
| **Note to Auditor:** Effective date of R5 is 7/1/14. Review footnote 7 regarding how technical justification is achieved. Per FERC Order 796 P16, MOD-026-1 Applicability Section 4.2.4 allows Transmission Planners to request that Generator Owners who otherwise are not covered by the Applicability Section (i.e., whose MVA ratings are lower than the applicability thresholds specified in Section 4 but meet or exceed the Registry Criteria) provide model verifications or correct model data. |

Auditor Notes:

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R6 Supporting Evidence and Documentation

1. Each Transmission Planner shall provide a written response to the Generator Owner within 90 calendar days of receiving the verified excitation control system or plant volt/var control function model information in accordance with Requirement R2 that the model is usable (meets the criteria specified in Parts 6.1 through 6.3) or is not usable.
	1. The excitation control system or plant volt/var control function model initializes to compute modeling data without error,
	2. A no-disturbance simulation results in negligible transients, and
	3. For an otherwise stable simulation, a disturbance simulation results in the excitation control and plant volt/var control function model exhibiting positive damping.

If the model is not usable, the Transmission Planner shall provide a technical description of why the model is not usable.

1. Evidence of Requirement R6 must include, for each model received, the dated response indicating the model was usable or not usable according to the criteria specified in Parts 6.1 through 6.3 and for a model that is not usable, a technical description; and dated evidence of transmittal (e.g., electronic mail message, postal receipt, or confirmation of facsimile) that the Generator Owner was notified within 90 calendar days of receipt of model information.

**Registered Entity Response (Required):**

**Question:** Did the entity receive verified model information from a Generator Owner in accordance with R2 during the compliance monitoring period? [ ]  Yes [ ]  No

If Yes, provide a list of the verified model information received and evidence of compliance.

If No, how was the determination made that verified model information specified in R6 was not received?

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

**Registered Entity Response (Required):**

**Compliance Narrative:**

Provide a brief explanation, in your own words of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Compliance Assessment Approach Specific to MOD-026-1, R6

***This section to be completed by the Compliance Enforcement Authority***

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|  | Review the response to the Question, if the response was Yes, then: |
|  | Verify the date the Generator Owner provided the Transmission Planner the verified excitation control system or plant volt/var control function model information in accordance with Requirement R2 for applicable units. |
|  | Verify a dated response was provided by the Transmission Planner to the Generator Owner within 90 days indicating the model was either:  |
|  | * Usable according to the criteria specified as following:
 |
|  | * + (R6.1)The excitation control system or plant volt/var control function model initializes to compute modeling data without error,
 |
|  | * + (R6.2) A no-disturbance simulation results in negligible transients, and
 |
|  | * + (R6.3) For an otherwise stable simulation, a disturbance simulation results in the excitation control and plant volt/var control function model exhibiting positive damping, or
 |
|  | * Not usable.
 |
|  | For a model that is not usable, a technical description of why the model is not usable is required. |
| **Note to Auditor:**  |

Auditor Notes:

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Additional Information

Reliability Standard



The full text of STD-MOD-026-1 may be found on the NERC Web Site (www.nerc.com) under “Program Areas & Departments”, “Reliability Standards.”

In addition to the Reliability Standard, there is an applicable Implementation Plan available on the NERC Web Site.

In addition to the Reliability Standard, there is background information available on the NERC Web Site.

Capitalized terms in the Reliability Standard refer to terms in the NERC Glossary, which may be found on the NERC Web Site.

Sampling Methodology

Sampling is essential for auditing compliance with NERC Reliability Standards since it is not always possible

or practical to test 100% of either the equipment, documentation, or both, associated with the full suite of enforceable standards. The Sampling Methodology Guidelines and Criteria (see NERC website), or sample guidelines, provided by the Electric Reliability Organization help to establish a minimum sample set for monitoring and enforcement uses in audits of NERC Reliability Standards.

Regulatory Language

The Commission approved MOD-026-1 on March 20, 2014. Generator Verification Reliability Standards, Order No. 796, 79 Fed. Reg. 17011 (Mar. 27, 2014), 146 FERC ¶ 61,213 (2014).

<http://www.nerc.com/FilingsOrders/us/FERCOrdersRules/E-4.pdf>

Higher MVA Applicability Threshold

P 37. The Commission found that the higher applicability thresholds of Reliability Standards MOD-026-1 and MOD-027-1 are appropriate for a continent-wide standard. The Commission indicated that: “Section 4.2.4 of Reliability Standard MOD-026-1 allows transmission planners to request a model review and related verification information in accordance with Requirement R5 from generators below the applicability threshold when ‘technically justified’ (where the simulated unit or plant response does not match the measured unit or plant response).” The Commission also stated that: “the higher applicability threshold does not excuse generator owners with small units from the expectation that estimated model data they provide to transmission planners for use in simulations will be accurate.”

Process for Identifying “Technically Justified” Generating Units in MOD-026- 1

P 44. The Commission found that the basis and associated process for a transmission planner to demonstrate that it is “technically justified” for a generator owner below the applicability threshold to comply with Requirement R5 of Reliability Standard MOD-026-1 under Section 4.2.4 is sufficiently clear and workable. The Commission stated that a universal approach could “unintentionally limit or otherwise undermine the regional knowledge and judgment of transmission planners.” The Commission also noted that, “in the standard drafting team’s technical judgment, discrepancies between simulations and measured data will be ‘readily apparent.’”

P 45. The Commission found that: “local events that occur in the normal course of operations could provide adequate information for a transmission planner to demonstrate the need to invoke the technically justified provision of Reliability Standard MOD-026-1.”

Violation Severity Level for MOD-026-1, Requirement R6

P 57. The Commission summarized its concern expressed in the NOPR regarding the proposed violation severity level for Requirement R6 of MOD-026-1 and Requirement R5 of MOD-027-1. Specifically, the Commission indicated that NERC did not propose any violation severity level for a violation of the last sentence of these requirements: “If the model is not useable, the [transmission planner] shall provide a technical description of why the model is not useable.” The Commission noted in the NOPR that compliance with this obligation is no less important than compliance with the other obligations of these requirements. The Commission further stated that the lack of a violation severity level for this type of violation is inconsistent with the Commission’s Violation Severity Level Guideline 3, because the proposed violation severity level does not address all of the obligations in these requirements.

P 58. The Commission directed NERC to “submit a violation severity level that addresses a transmission planner’s obligation to provide a technical description of why a model submitted by a generation owner is not usable for Requirement R6 of MOD-026-1 and Requirement R5 of MOD-027-1.”

Revision History for RSAW

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| **Version** | **Date** | **Reviewers** | **Revision Description** |
| 1 | 06/12/2014 | RSAW Task Force | New Document |
| 2 | 09/26/2018 | RSAW Task Force | Errata change to agree with Standard language. Reference to verification date changed to transmittal date. |
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1. NERC developed this Reliability Standard Audit Worksheet (RSAW) language in order to facilitate NERC’s and the Regional Entities’ assessment of a registered entity’s compliance with this Reliability Standard. The NERC RSAW language is written to specific versions of each NERC Reliability Standard. Entities using this RSAW should choose the version of the RSAW applicable to the Reliability Standard being assessed. While the information included in this RSAW provides some of the methodology that NERC has elected to use to assess compliance with the requirements of the Reliability Standard, this document should not be treated as a substitute for the Reliability Standard or viewed as additional Reliability Standard requirements. In all cases, the Regional Entity should rely on the language contained in the Reliability Standard itself, and not on the language contained in this RSAW, to determine compliance with the Reliability Standard. NERC’s Reliability Standards can be found on NERC’s website. Additionally, NERC Reliability Standards are updated frequently, and this RSAW may not necessarily be updated with the same frequency. Therefore, it is imperative that entities treat this RSAW as a reference document only, and not as a substitute or replacement for the Reliability Standard. It is the responsibility of the registered entity to verify its compliance with the latest approved version of the Reliability Standards, by the applicable governmental authority, relevant to its registration status.

The NERC RSAW language contained within this document provides a non‑exclusive list, for informational purposes only, of examples of the types of evidence a registered entity may produce or may be asked to produce to demonstrate compliance with the Reliability Standard. A registered entity’s adherence to the examples contained within this RSAW does not necessarily constitute compliance with the applicable Reliability Standard, and NERC and the Regional Entity using this RSAW reserves the right to request additional evidence from the registered entity that is not included in this RSAW. Additionally, this RSAW includes excerpts from FERC Orders and other regulatory references. The FERC Order cites are provided for ease of reference only, and this document does not necessarily include all applicable Order provisions. In the event of a discrepancy between FERC Orders, and the language included in this document, FERC Orders shall prevail. [↑](#footnote-ref-1)
2. Compliance Assessment Date(s): The date(s) the actual compliance assessment (on-site audit, off-site spot check, etc.) occurs. [↑](#footnote-ref-2)
3. Technical justification is achieved by the Transmission Planner demonstrating that the simulated unit or plant response does not match the measure unit or plant response. [↑](#footnote-ref-3)
4. If verification is performed, the 10-year period as outlined in MOD-026 Attachment 1 is reset. [↑](#footnote-ref-4)
5. Ibid [↑](#footnote-ref-5)
6. Exciter, voltage regulator, plant volt/var or power system stabilizer control replacement including software alterations that alter excitation control system equipment response, plant digital control system addition or replacement, plant digital control system software alterations that alter excitation control system equipment response, plant volt/var function equipment addition or replacement (such as static var systems, capacitor banks, individual unit excitation systems, etc.), a change in the voltage control mode (such as going from power factor control to automatic voltage control, etc.), exciter, voltage regulator, impedance compensator, or power system stabilizer settings change. Automatic changes in settings that occur due to changes in operating mode do not apply to Requirement R4. [↑](#footnote-ref-6)
7. Technical justification is achieved by the Transmission Planner demonstrating that the simulated unit or plant response does not match the measured unit or plant response. [↑](#footnote-ref-7)