Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the additional draft of the proposed standard for a formal 28-day comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	May 15, 2024
SAR posted for comment	May 17 – June 24, 2024
26-day initial formal comment period with ballot	May 22 – June 16, 2025

Anticipated Actions	Date
28-day formal comment period with ballot	August 14 – September 10, 2025
10-day final ballot	September 2025
Board adoption	November 4, 2025

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms ~~listed below~~were previously approved by the ballot body and will be presented ~~for approval with the proposed standard. Upon~~to the Board for adoption~~, this section will be removed.~~ in August 2025:

Term(s):

Model Verification: The process of confirming that model structure and parameter values ~~represent~~are representative of the equipment or facility design and settings by reviewing equipment or facility design and settings documentation.

Model Validation: The process of comparing ~~measurements with~~ simulation results with measurements to assess how closely a model's behavior matches the measured behavior.

A. Introduction

1. **Title:** Verification and Validation of Dynamic Models and Data

2. **Number:** MOD-026-2

3. **Purpose:** To verify and validate that the dynamic models and associated parameters used to assess Bulk Electric System (BES) reliability represent the in-service equipment of Bulk Power System (BPS) facilities including generating facilities, transmission connected dynamic reactive resources, and high-voltage direct current (HVDC) systems.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Transmission Owner

   4.1.3. Planning Coordinator

   4.1.4. Transmission Planner

   4.2. Facilities:

   4.2.1. Individual synchronous generating unit meeting the criteria set by Inclusion I2 of the BES definition~~.~~;

   4.2.2. ~~Generating~~Synchronous generating plant/Facility meeting the criteria set by Inclusion I2 of the BES definition~~.~~;

   4.2.3. Dynamic reactive resources meeting the criteria set by Inclusion I5 of the BES definition with a gross (individual or aggregate) nameplate rating greater than 20 MVA including~~, but not limited to~~:

   4.2.3.1. Synchronous ~~condenser~~condensers; and

   4.2.3.2. Flexible alternating current transmission system (FACTS) devices.

   4.2.4. High-voltage direct current (HVDC) systems including:

   4.2.4.1. Line commutated converter (LCC); and

   4.2.4.2. Voltage source converter (VSC).

   4.2.5. Bulk Electric System (BES) Inverter-Based Resources; and

   4.2.6. Non-BES Inverter-Based Resources that either have, or contribute to an aggregate nameplate capacity of greater than or equal to 20 MVA, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV.

~~4.2.7. Facilities meeting an Exclusion of the BES definition are exempt as an applicable Facility.~~

5. Effective Date: See Implementation Plan for Project 2020-06 Verification of Models and Data for Generators.

B. Requirements and Measures

R1. Each Transmission Planner and its Planning Coordinator shall jointly develop dynamic model ~~verification~~ requirements ~~and processes~~for the purpose of Model Verification and Model Validation. The dynamic model ~~verification~~ requirements ~~and processes~~ shall be made available to Generator Owner(s) and Transmission Owner(s) by the Transmission Planner and shall include at a minimum the following: *[Violation Risk Factor: Lower] [Time Horizon: ~~Operations Planning and~~ Long-term Planning]*

1.1. Positive sequence dynamic model ~~specifications developed under MOD-032 for applicable facilities, specifically identified within the applicable table~~requirements, including requirements for the models and functions listed in Attachment 1~~:~~;

1.1.1. ~~Specify the~~Specification of which limiting and protective functions listed within Attachment 1, Table 1.1 ~~that~~ are required to be represented in the model~~;~~.

1.2. For the facilities listed in Applicability Sections 4.2.5 and 4.2.6 (Inverter-Based Resources), 4.2.3.2 (FACTS devices), 4.2.4.1 (LCC HVDC), and 4.2.4.2 (VSC HVDC):

1.2.1. ~~Identify~~Identification of which legacy[1] facilities ~~for which~~require electromagnetic transient (EMT) model(s) ~~are required~~ under Requirement R3; and

1.2.2. ~~Specify~~Specification of acceptable EMT models, format, and level of detail.

1.3. Any additional requirements not listed under Requirement R1, Parts 1.1 and 1.2 used to assess the acceptability of submitted dynamic models and accompanying documentation. If no such additional requirements exist, the Transmission Planner shall document that none are applicable.

~~**1.3.** Acceptance criteria used by the Transmission Planner to determine disposition of submitted model(s) and accompanying information under Requirement R5;[2], [3]~~

~~**1.4.** Process for Generator Owner(s) or Transmission Owner(s) to provide documentation of Model Verification and applicable models to its Transmission Planner;~~

~~**1.5.** Process for submitting documentation of Model Verification and applicable model(s) to the applicable Planning Coordinator after the model(s) meets acceptance criteria of Requirement R1 Part 1.3; and~~

[1] A legacy facility for the purpose of this standard is any facility with ~~an in-service date~~a commercial operation date prior to the effective date of MOD-026-2.

~~[2] The acceptance criteria may overlap with or may augment data reporting and model submittal specifications set in place by the Transmission Planner and Planning Coordinator under MOD-032 Requirement R1.~~

~~[3] Model submittal requirements needed by the Transmission Planner may include, but are not limited to, required data files and inclusions needed in the model report.~~

~~**1.6.** Process for Generator Owner(s) or Transmission Owner(s) to obtain current (in-use) model data from its Transmission Planner for an existing facility owned by the Generator Owner(s) or Transmission Owner(s) within 90 calendar days of receiving a written request.~~

M1. Each Transmission Planner and ~~each~~ Planning Coordinator must provide dated evidence such as document(s), webpage(s), or web portal(s) outlining the jointly developed ~~Model Verification~~dynamic model requirements~~ and processes including at a minimum each of the items in Parts 1.1 through 1.6~~. Each Transmission Planner ~~and Planning Coordinator~~ shall have evidence demonstrating that the dynamic model ~~verification~~ requirements ~~and processes~~ were made available to ~~the~~ Generator Owner(s) and Transmission Owner(s) in accordance with Requirement R1.

R2. Each Generator Owner or Transmission Owner shall provide~~: documentation of Model Verification of a~~ to its Transmission Planner positive sequence dynamic model(s) with associated parameters, any information pertaining to changes to the model(s) or its parameters, and ~~the verified model(s)~~[4] ~~to its~~accompanying documentation in accordance with the periodicity requirements of Attachment 2. Each Generator Owner or Transmission ~~Planner that~~Owner shall provide the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

~~**2.1.** Verifies that the model represents the in-service equipment of the facility according to the requirements and process developed in Requirement R1;~~

2.1. Positive sequence dynamic model(s) representing the in-service equipment of the facility including, at a minimum, each of the applicable models and functions listed in Attachment 1 in accordance with the requirements developed in Requirement R1;

2.2. ~~Verifies~~Documentation of Model Verification demonstrating that the configurable, site-specific parameters of the model(s) ~~represent parameters of the~~are representative of the design and settings of the in-service equipment of the facility~~, for those parameters that can be confirmed by the Generator Owner or Transmission Owner.~~;

~~**2.3.** Verifies that the model includes at a minimum each of the information described in Attachment 1; and~~

~~**2.4.** Is updated within the applicable periodicity timeline outlined in the Periodicity table in Attachment 2.~~

2.2.1. For any parameters that cannot be verified, the Generator Owner or Transmission Owner shall provide a written statement to the Transmission Planner detailing any such parameters and reasons they cannot be verified.

~~[4] The development of a "verified model" includes both Model Verification and Model Validation activities performed by the Generator Owner or Transmission Owner.~~

2.3. Documentation of Model Validation comparing the behavior of the model(s) to the measured behavior during a staged test or system disturbance for:

2.3.1. A dynamic reactive power or voltage excursion event to perform Model Validation of generator, excitation control, reactive power control, and voltage control models, as applicable; and

2.3.2. A dynamic active power or frequency excursion event[2] to perform Model Validation of governor control, active power control, and frequency control models, as applicable.

M2. Each Generator Owner or Transmission Owner must provide dated evidence for each applicable facility that it provided ~~Model Verification of a~~ positive sequence dynamic model(s) ~~addressing each of the items in Requirement R2~~and accompanying documentation to its Transmission Planner in accordance with Requirement R2.

R3. For facilities ~~identified under the~~listed in Applicability ~~sections~~Sections 4.2.3.2 (FACTS devices), 4.2.4 (HVDC), 4.2.5 (BES IBRs), and 4.2.6 (Non-BES IBRs), excluding legacy facilities where the original equipment manufacturer[3] no longer supports EMT model(s) for the facility and legacy facilities not identified by the Transmission Planner under Requirement R1, Part 1.2.1, each Generator Owner or Transmission Owner shall provide ~~a verified~~to its Transmission Planner EMT model(s)[5] with associated parameters ~~and accompanying~~, any information ~~that represent the in-service equipment of the facility to its Transmission Planner according to the requirements and processes developed by its Transmission Planner and Planning Coordinator in Requirement R1 Part 1.2, within the timeframe specified in Attachment 2. The verified model(s)~~pertaining to changes to the model(s) or its parameters, and accompanying ~~information shall include at a minimum~~documentation, in accordance with the periodicity requirements of Attachment 2. Each Generator Owner or Transmission Owner shall, provide the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

~~**3.1.** Test[6] result(s) demonstrating a comparison of the facility's response and the facility's EMT model response for large signal disturbances. For an IBR, the~~

[2] Model Validation frequency excursion criteria: "≥ 0.04 hertz deviation" (nadir point) from scheduled frequency for the Eastern Interconnection with the applicable facility operating in a frequency responsive mode. "≥ 0.08 hertz deviation" (nadir point) from scheduled frequency for the ERCOT and Western Interconnections with the applicable facility operating in a frequency responsive mode. "≥ 0.30 hertz deviation" (nadir point) from scheduled frequency for the Quebec Interconnection with the applicable unit operating in a frequency responsive mode.

[3] If the original equipment manufacturer that commissioned the facility was acquired, merged, or operating under a different name, the new company would be considered the original equipment manufacturer.

~~[5] The development of a "verified EMT model" includes both Model Verification and Model Validation activities performed by the Generator Owner or Transmission Owner.~~

~~[6] A hardware specific test may include a factory type test, hardware in the loop test, or other manufacturer test to ensure the EMT model's large signal response emulates the supplied equipment to the extent possible.~~

~~Generator Owner shall test and compare only the IBR unit.[7] If test results are not obtainable, the Generator Owner or Transmission Owner shall document the reason;~~

~~**3.2.** Documentation of Model Verification demonstrating that the configurable, site-specific parameters of the submitted facility model(s) represent parameters of the in-service equipment of the facility, for those parameters that can be confirmed by the Generator Owner or Transmission Owner;~~

~~**3.3.**~~**3.1.** A facility EMT model with associated parameters representing the applicable HVDC, FACTS ~~devices~~device, IBR unit(s)[4], collector system, auxiliary control ~~devices,[8]~~device(s),[5] power plant controller, generator step-up transformer(s), and main power transformer(s) ~~shall include~~that includes:

~~**3.3.1.**~~**3.1.1.** Enabled ~~protections~~protective functions that directly trip the IBR unit(s) or facility;[9][6] and

~~**3.3.2.**~~**3.1.2.** Limiting functions that limit active/reactive output of the IBR unit(s) or facility.[10][7]

3.2. Documentation of Model Verification demonstrating that the configurable, site-specific parameters of the model(s) are representative of the design and settings of the in-service equipment of the facility;

3.2.1. For any parameters that cannot be verified, the Generator Owner or Transmission Owner shall provide a written statement to the Transmission Planner detailing why any such parameters and reasons they cannot be verified.

~~**3.4.**~~**3.3.** Documentation of Model Validation comparing the behavior of the facility EMT model ~~response using the recorded response of a dynamic reactive power or voltage event from either~~to the measured behavior during a staged test or ~~a measured~~ system disturbance~~;~~ for:

~~**3.5.** Documentation of Model Validation of the facility EMT model response using the recorded response of a dynamic active power or frequency event from either a~~

~~[7] For purposes of this standard, the phrase "IBR unit" refers to an individual device, or a grouping of multiple devices, that uses a power electronic interface(s), such as an inverter or converter, is capable of exporting Real Power from a primary energy source or energy storage system, and that connects at a single point on the collector system.~~

[4] For purposes of this standard, the phrase "IBR unit" refers to an individual device, or a grouping of multiple devices, that uses a power electronic interface(s), such as an inverter or converter, that is capable of exporting Real Power from a primary energy source or energy storage system, and that connects at a single point on the collector system.

~~[8] Only to include those auxiliary control devices that act on voltage and/or frequency.~~

[5] Only to include those auxiliary control devices that act on voltage and/or frequency.

[9][6] Required protective functions are those that act directly on, or act on quantities derived from, voltage, frequency, and/or current. Examples of protections include DC reverse current, DC bus over-voltage and under-voltage, DC voltage unbalance, DC overcurrent, AC over-voltage and under-voltage protection (instantaneous and RMS), AC overcurrent, over-frequency and under-frequency protection, feeder (equivalent) AC over-voltage and under-voltage, feeder (equivalent) over-frequency and under-frequency, PLL (or equivalent) loss of synchronism, and phase jump tripping.

[10][7] Required limiting functions are those that act directly on, or act on quantities derived from, voltage, frequency, and/or current.

~~staged test or a measured system disturbance in which the power plant controller's or other facility active power controller's perceived frequency deviations are in accordance with Attachment 2, Note 1; and~~

3.3.1. A dynamic reactive power or voltage excursion event to perform Model Validation of reactive power control and voltage control models, as applicable; and

3.3.2. A dynamic active power or frequency excursion event[8] to perform Model Validation of active power control and frequency control models, as applicable.

3.4. For IBR facilities, test[9] result(s) demonstrating a comparison of the IBR unit response and the IBR unit EMT model response for large signal disturbances. If test results are not obtainable, the Generator Owner shall document the reason; and

~~**3.6.**~~**3.5.** Documentation comparing ~~large signal disturbance~~the response of the facility positive sequence dynamic model~~(s)~~ provided in Requirement R2 to the response of the facility EMT model for large signal disturbances as defined by the Transmission Planner.

M3. Each Generator Owner or Transmission Owner must provide dated evidence for each applicable facility that ~~a verified~~it provided EMT model(s) ~~with associated parameters~~ and accompanying ~~information were provided~~documentation to its Transmission Planner in accordance with Requirement R3.

R4. Each Generator Owner or Transmission Owner~~, upon~~ shall, within 180 calendar days after making a hardware, software, firmware, control mode, or setting change(s) to ~~any in-service equipment specified in Requirement R2 or Requirement R3~~an applicable unit or facility that alters the ~~applicable equipment's~~ dynamic response characteristic(s),[11] ~~shall~~ provide its Transmission Planner with ~~one of the following, within the timeframe described in Attachment 2:~~updated model(s) and accompanying documentation as described in Requirement R2, Parts 2.1 through 2.3 and, if

[8] Model Validation frequency excursion criteria: "≥ 0.04 hertz deviation" (nadir point) from scheduled frequency for the Eastern Interconnection with the applicable facility operating in a frequency responsive mode. "≥ 0.08 hertz deviation" (nadir point) from scheduled frequency for the ERCOT and Western Interconnections with the applicable facility operating in a frequency responsive mode. "≥ 0.30 hertz deviation" (nadir point) from scheduled frequency for the Quebec Interconnection with the applicable unit operating in a frequency responsive mode.

[9] A hardware specific test may include a factory type test, hardware in the loop test, or other manufacturer test to ensure the EMT model's large signal response emulates the supplied equipment to the extent possible.

~~[11] Such changes include: (a) exciter, voltage regulator, plant volt/var, power system stabilizer, or governor control replacement; (b) addition or replacement of protection systems that deploy under-voltage and over-voltage and/or under-frequency and over-frequency elements; (c) plant digital control system addition or replacement; (d) plant volt/var function equipment addition or replacement (such as static var systems, capacitor banks, individual unit excitation systems, or other equipment); (e) software, firmware, or setting change in the equipment (such as exciter, voltage regulator, power system stabilizer, excitation limiter, governor, plant controller, FACTs devices or PED, or other equipment) that alters its dynamic response characteristics; (f) a permanent change in the voltage or frequency control mode (such as manually switching the voltage regulator from power factor control to automatic voltage control); or (g) any other equipment change that alters its dynamic response characteristic. Automatic change of control mode or a control setting that is implemented in the plant control systems are excluded.~~

applicable, Requirement R3, Parts 3.1 through 3.5. If mutually agreed upon with the Transmission Planner, model(s) and accompanying documentation may be provided according to a revised timeline. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

- ~~An updated verified model(s) in accordance with Requirement R2 and Requirement R3 reflecting applicable change(s) being made; or~~
- ~~A plan to provide the verified model(s) and associated information in accordance with Requirement R2 or Requirement R3.~~

M4. Each Generator Owner or Transmission Owner must provide dated evidence (e.g., email message, postal receipt, upload via web portal, etc.) that it provided its Transmission Planner with ~~an~~ updated ~~verified~~ model ~~or a plan to verify the model within the timeframe described in Attachment 2~~(s) and accompanying documentation in accordance with Requirement R4 for each change ~~affecting~~altering dynamic ~~model~~ response characteristic(s) ~~to in-service equipment~~of an applicable unit or facility.

R5. Each Transmission Planner~~,~~ shall, within 90 calendar days after receiving ~~the submitted~~ model(s) and accompanying ~~information from the applicable~~documentation provided by a Generator Owner or Transmission Owner, ~~shall review each submission in accordance with the process developed in~~evaluate the model(s) and accompanying documentation to determine if it meets the dynamic model requirements developed under Requirement R1 and provide ~~a written response to the submitter within the timeframe in Attachment 2. The written response shall include one of the following~~: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*

- A written notification to the Generator Owner or Transmission Owner that the model(s) and accompanying documentation are acceptable, and a written notification, or the accepted model(s) and accompanying documentation, to its Planning Coordinator; or
- A written notification to the Generator Owner or Transmission Owner that the model(s) and accompanying documentation are not acceptable, along with an explanation and any supporting evidence demonstrating the issue(s).
- ~~Notification of Acceptance: the model and accompanying information meet the acceptance criteria established in Requirement R1, Part 1.3; or~~
- ~~Notification of Denial: the model and accompanying information does not meet acceptance criteria established in Requirement R1, Part 1.3, or information submitted is incomplete. The notification of denial shall include an explanation and supporting evidence.~~

M5. Each Transmission Planner must provide dated evidence that it reviewed ~~each submission~~provided model(s) and accompanying documentation in accordance with the ~~process~~dynamic model requirements developed in Requirement R1 and provided a written response notification in accordance with Requirement R5~~, such as~~. Dated

evidence may include date received, review date of ~~submitted model~~provided model(s) and accompanying ~~information, review disposition (notification of acceptance or denial)~~documentation, and dated response ~~to the submitter~~ (e.g., email message, postal receipt, etc.).

R6. Each Generator Owner or Transmission Owner~~,~~ shall, within 90 calendar days after receiving a notification of ~~denial~~unacceptability under Requirement R5 or within 180 calendar days after receiving a request from its ~~applicable~~ Transmission Planner ~~for~~to perform a model review due to identified model or accompanying ~~information~~documentation deficiencies, ~~shall~~ provide a ~~written~~ response to its ~~applicable~~ Transmission Planner ~~within the timeframe in Attachment 2. The written~~. If mutually agreed upon with the Transmission Planner, the response to a request to perform a model review may be provided according to a revised timeline. The provided response shall ~~contain~~include one of the following: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*

- ~~An updated verified model and accompanying information in accordance with Requirement R2 and Requirement R3;~~
- ~~A plan to submit the verified model~~Updated model(s) and accompanying ~~information in accordance with~~documentation as described in Requirement R2 ~~and~~, Parts 2.1 through 2.3 and, if applicable, Requirement R3, Parts 3.1 through 3.5; or
- A ~~resubmission of the current model and accompanying information in accordance with Requirement R2 and Requirement R3, with additional~~ technical justification and supporting evidence ~~to address the notification of denial or request for model review from the Transmission Planner~~for maintaining the current model(s) and accompanying documentation.

M6. Each Generator Owner or Transmission Owner must provide dated evidence ~~that it provided the required response to the Transmission Planner within the timeframe in Attachment 2~~ (e.g., email message, postal receipt, etc.) that it provided a response to its Transmission Planner in accordance with Requirement R6.

R7. Each Transmission Planner shall provide the current (in-use) model(s) and accompanying documentation for an existing facility within 90 calendar days of receiving a written request for such data from the Generator Owner or Transmission Owner that owns the facility. *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*

M7. Each Transmission Planner must provide dated evidence (e.g., email message, postal receipt, etc.) that it provided the current (in-use) model(s) and accompanying documentation to the Generator Owner or Transmission Owner in accordance with Requirement R7.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- Requirements R1 through ~~R6~~R7, and Measures M1 through ~~M6~~M7, since the last audit, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If an applicable entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved, or for the time specified above, whichever is longer. The Compliance Enforcement Authority shall keep the last audit records, and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: "Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context, (1) the NERC Compliance Monitoring and Enforcement Program (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department, or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability Standards.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	~~The Transmission Planner and Planning Coordinator jointly developed dynamic Model Verification requirements and processes, but they failed to include one of the items in Requirement R1, Parts 1.1 through 1.6.~~N/A	The Transmission Planner and Planning Coordinator jointly developed dynamic ~~Model Verification~~model requirements ~~and processes~~, but they failed to include ~~two~~one of the items in Requirement R1, Parts 1.1 through ~~1.6~~1.3.	The Transmission Planner and Planning Coordinator jointly developed dynamic ~~Model Verification~~model requirements ~~and processes~~, but they failed to include ~~three~~two of the items in Requirement R1, Parts 1.1 through ~~1.6~~1.3.	The Transmission Planner and Planning Coordinator jointly developed dynamic ~~Model Verification~~model requirements ~~and processes~~, but they failed to include ~~four or more~~three of the items in Requirement R1, Parts 1.1 through ~~1.6~~1.3. OR The Transmission Planner and Planning Coordinator failed to jointly develop dynamic ~~Model Verification~~model requirements ~~and processes~~. OR The Transmission Planner failed to make dynamic ~~Model Verification~~model requirements ~~and processes~~ available to Generator Owners and Transmission Owners.
R2.	The applicable entity provided ~~documentation of Model Verification of a~~ positive sequence dynamic model(s),	The applicable entity provided ~~documentation of Model Verification of a~~ positive sequence dynamic model(s),	The applicable entity provided ~~documentation of Model Verification of a~~ positive sequence dynamic model(s),	The applicable entity provided ~~documentation of Model Verification of a~~ positive sequence dynamic model(s),

	with associated parameters, and accompanying ~~information~~documentation to its Transmission Planner ~~after the date required in~~in accordance with the periodicity requirements of Attachment 2 with the exception of Row 2, but within 90 calendar days after the date required. OR The applicable entity provided ~~a verified~~dynamic model(s) that failed to include one of the applicable items in Attachment 1, ~~Tables~~Table 1.1 or Table 1.2.	with associated parameters, and accompanying ~~information~~documentation to its Transmission Planner between 91 and 180 calendar days after the date ~~required in~~in accordance with the periodicity requirements of Attachment 2 with the exception of Row 2. OR The applicable entity provided ~~a verified~~dynamic model(s) that failed to include two of the applicable items in Attachment 1, ~~Tables~~Table 1.1 or Table 1.2.	with associated parameters, and accompanying ~~information~~documentation to its Transmission Planner between 181 and 270 calendar days after the date ~~required in~~in accordance with the periodicity requirements of Attachment 2 with the exception of Row 2. OR The applicable entity provided ~~a verified~~dynamic model(s) that failed to include three of the applicable items in Attachment 1, ~~Tables~~Table 1.1 or Table 1.2.	with associated parameters, and accompanying ~~information~~documentation to its Transmission Planner more than 270 calendar days after the date ~~required in~~in accordance with the periodicity requirements of Attachment 2 with the exception of Row 2 where the provision should occur no more than 90 calendar days after the date in Row 2. OR The applicable entity failed to provide ~~a verified~~dynamic model(s) or accompanying information.
R3.	The applicable entity provided ~~a verified~~EMT model(s) for its applicable ~~facilities~~facility with associated parameters and accompanying ~~information~~documentation to its Transmission Planner, ~~according to~~in accordance with the requirements ~~and processes~~ developed by its Transmission Planner and Planning Coordinator, after the date required but within	The applicable entity provided ~~a verified~~EMT model(s) for its applicable ~~facilities~~facility with associated parameters and accompanying ~~information~~documentation to its Transmission Planner, ~~according to~~in accordance with the requirements ~~and processes~~ developed by its Transmission Planner and Planning Coordinator, between 91 and 180 calendar days after the date required.	The applicable entity provided ~~a verified~~EMT model(s) for its applicable ~~facilities~~facility with associated parameters and accompanying ~~information~~documentation to its Transmission Planner, ~~according to~~in accordance with the requirements ~~and processes~~ developed by its Transmission Planner and Planning Coordinator, between 181 and 270 calendar days after the date required.	The applicable entity provided ~~a verified~~EMT model(s) for its applicable ~~facilities~~facility with associated parameters and accompanying ~~information~~documentation to its Transmission Planner, ~~according to~~in accordance with the requirements ~~and processes~~ developed by its Transmission Planner and Planning Coordinator, more than 270 calendar days after the date required.

	90 calendar days after the date required. OR The applicable entity provided ~~a verified~~EMT model(s) and accompanying documentation by the required date, but failed to include one of the items in Requirement R3, Parts 3.1 through ~~3.6~~3.5.	OR The applicable entity provided ~~a verified~~EMT model(s) and accompanying documentation by the required date, but failed to include two of the items in Requirement R3, Parts 3.1 through ~~3.6~~3.5.	OR The applicable entity provided ~~a verified~~EMT model(s) and accompanying documentation by the required date, but failed to include three of the items in Requirement R3, Parts 3.1 through ~~3.6~~3.5.	OR The applicable entity provided ~~a verified~~EMT model(s) by the required date, but failed to include four ~~or more~~ of the items in Requirement R3, Parts 3.1 through ~~3.6~~3.5. OR The applicable entity failed to provide ~~a verified~~EMT model(s) and accompanying documentation.
R4.	The applicable entity provided ~~an~~ updated ~~verified~~ model(s) ~~or a plan to verify the model(s)~~and accompanying documentation to its Transmission Planner between 181 and 210 calendar days ~~after the return to service date~~(or within 30 calendar days after the timeline mutually agreed to by the Transmission Planner) after making a change that alters the dynamic response characteristic(s).	The applicable entity provided ~~an~~ updated ~~verified~~ model(s) ~~or a plan to verify the model(s)~~and accompanying documentation between 211 and 240 calendar days ~~after the return to service date~~(or between 31 and 60 calendar days after the timeline mutually agreed to by the Transmission Planner) after making a change that alters the dynamic response characteristic(s).	The applicable entity provided ~~an~~ updated ~~verified~~ model(s) ~~or a plan to verify the model(s)~~and accompanying documentation between 241 and 270 calendar days ~~after the return to service date~~(or between 61 and 90 calendar days after the timeline mutually agreed to by the Transmission Planner) after making a change that alters the dynamic response characteristic(s).	The applicable entity provided updated model(s) and accompanying documentation more than 270 calendar days (or more than 90 calendar days after the timeline mutually agreed to by the Transmission Planner) after making a change that alters the dynamic response characteristic(s). OR The applicable entity failed to identify, provide ~~an~~ updated ~~verified~~ model(s) ~~or a plan to verify the model(s) within 270 calendar days after the return to service date~~and accompanying documentation

				after making a change that alters the dynamic response characteristic(s).
R5.	The Transmission Planner reviewed the submitted model(s) and accompanying ~~information in accordance with the process~~documentation for adherence to the dynamic model requirements developed in Requirement R1, ~~Part 1.3,~~ but provided a written response to the submitter between ~~121 to 150~~91 to 120 calendar days after receiving the submission.	The Transmission Planner reviewed the submitted model(s) and accompanying ~~information in accordance with the process~~documentation for adherence to the dynamic model requirements developed in Requirement R1, ~~Part 1.3,~~ but provided a written response to the submitter between ~~151 to 180~~121 to 150 calendar days after receiving the submission.	The Transmission Planner reviewed the submitted model(s) and accompanying ~~information in accordance with the process~~documentation for adherence to the dynamic model requirements developed in Requirement R1, ~~Part 1.3,~~ but provided a written response to the submitter between ~~181 to 210~~151 to 180 calendar days after receiving the submission.	The Transmission Planner reviewed the submitted model(s) and accompanying ~~information in accordance with the process~~documentation for adherence to the dynamic model requirements developed in Requirement R1, ~~Part 1.3,~~ but provided a written response to the submitter ~~greater~~more than ~~210~~180 calendar days after receiving the submission. OR The Transmission Planner reviewed the submitted model(s) and accompanying ~~information in accordance with the process~~documentation for adherence to the dynamic model requirements developed in Requirement R1, ~~Part 1.3,~~ and provided a ~~written~~ response ~~with notification of denial,~~ indicating that the model was unacceptable, but did not

				include an explanation and supporting evidence. OR The Transmission Planner failed to review the submitted model(s) and accompanying ~~information in accordance with the process~~documentation for adherence to the dynamic model requirements developed in Requirement R1, ~~Part 1.3,~~ and failed to provide a ~~written~~ response to the submitter.
R6.	The applicable entity provided a ~~written~~ response to the Transmission Planner after receiving a notification ~~or denial or a~~ of unacceptability under Requirement R5, but did so between 91 to 120 calendar days after receiving a notification of unacceptability. OR The applicable entity provided a response to the Transmission Planner after receiving a request ~~for~~to perform a model review, but did so between ~~121 to 150~~181 to 210 calendar days (or within 30 calendar	The applicable entity provided a ~~written~~ response to the Transmission Planner after receiving a notification ~~or denial or a~~ of unacceptability under Requirement R5, but did so between 121 to 150 calendar days after receiving a notification of unacceptability. OR The applicable entity provided a response to the Transmission Planner after receiving a request ~~for~~to perform a model review, but did so between ~~151 to 180~~211 to 240 calendar days (or between 31 and 60	The applicable entity provided a ~~written~~ response to the Transmission Planner after receiving a notification ~~or denial or a~~ of unacceptability under Requirement R5, but did so between 151 to 180 calendar days after receiving a notification of unacceptability. OR The applicable entity provided a response to the Transmission Planner after receiving a request ~~for~~to perform a model review, but did so between ~~181 to 210~~241 to 270 calendar days (or between 61 and 90	The applicable entity failed to provide a ~~written~~ response to the Transmission Planner after receiving a notification ~~or denial~~of unacceptability under Requirement R5 or a request ~~for~~to perform a model review. OR The applicable entity provided a ~~written~~ response to the Transmission Planner after receiving a notification ~~or denial or a~~ of unacceptability under Requirement R5, but did so more than 180 calendar

	days after the timeline mutually agreed to by the Transmission Planner) after receiving a ~~notification of denial or~~ request to perform a model review.	calendar days after the timeline mutually agreed to by the Transmission Planner) after receiving a ~~notification of denial or~~ request to perform a model review.	calendar days after the timeline mutually agreed to by the Transmission Planner) after receiving a ~~notification of denial or~~ request to perform a model review.	days after receiving a notification of unacceptability. OR The applicable entity provided a response to the Transmission Planner after receiving a request ~~for~~to perform a model review~~;~~, but did so more than ~~210~~270 calendar days (or more than 90 calendar days after the timeline mutually agreed to by the Transmission Planner) after receiving a ~~notification of denial or~~ request to perform a model review. OR The applicable entity provided a ~~written~~ response to the Transmission Planner after receiving a notification or ~~denial~~unacceptability or a request ~~for~~to perform a model review, but its ~~written~~ response failed to contain one of the ~~three~~two options for responses described in Requirement R6.
R7	The Transmission Planner provided the current (in-use) model(s) and accompanying documentation to the	The Transmission Planner provided the current (in-use) model(s) and accompanying documentation to the	The Transmission Planner provided the current (in-use) model(s) and accompanying documentation to the	The Transmission Planner provided the current (in-use) model(s) and accompanying documentation to the

	Generator Owner or Transmission Owner, but did so between 91 and 120 calendar days after receiving a request.	Generator Owner or Transmission Owner, but did so between 121 and 150 calendar days after receiving a request.	Generator Owner or Transmission Owner, but did so between 151 and 180 calendar days after receiving a request.	Generator Owner or Transmission Owner, but did so more than 180 calendar days after receiving a request. OR The Transmission Planner failed to provide the current (in-use) model(s) and accompanying documentation to the Generator Owner or Transmission Owner after receiving a request.

D. Regional Variances

None.

E. Associated Documents

- Project 2020-06 Verification of Models and Data for Generators Implementation Plan
- Project 2020-06 MOD-026-2 Technical Rationale
- Project 2020-06 VSL VRFs Justification Document
- Project 2020-06 Mapping Document

Version History

Version	Date	Action	Change Tracking
1	February 7, 2013	Adopted by NERC Board of Trustees	New
1	March 20, 2014	FERC Order issued approving MOD-026-1. (Order becomes effective for R1, R3, R4, R5, and R6 on 7/1/14. R2 becomes effective on 7/1/18.)	
1	May 7, 2014	NERC Board of Trustees adopted revisions to VSLs in Requirement R6.	Revisions
1	November 26, 2014	FERC issued a letter order approved revision to VSLs in Requirement R6.	
2	TBD	Adopted by NERC Board of Trustees	FERC Order No. 901 Revisions by Project 2020-06.

Attachment 1: ~~Applicability~~

Table 1.1 Applicability: Facility Sections 4.2.1 or 4.2.2 Synchronous Condenser ~~identified~~Identified in Facility Section 4.2.3.1			
Generator Model	**Excitation Control**	**Governor Control**	**Additional Limiting and Protective Functions**
1. Manufacturer, model number (if available), and type of generator/synchronous condenser; 2. Models representing the generator/synchronous condenser~~;~~ ~~3. .Model Validation of the positive sequence dynamic model(s) of this Table 1.1 response using the recorded response of a dynamic event from either a staged test or using a measured system disturbance.[12]~~	1. Manufacturer, model number (if available), and type of excitation system hardware and control; 2. Model(s) representing the excitation system including voltage regulator, impedance compensation (such as droop, line drop, differential compensation), power system stabilizer, and outer-loop controls which impact dynamic volt/volt-ampere reactive (VAR) performance~~;~~ ~~3. .Model Validation of the positive sequence dynamic model(s) of this Table 1.1 response using the recorded response of a dynamic reactive power or voltage event from either a staged test or using a measured system disturbance.~~	1. Manufacturer, model number (if available), and type of prime mover, governor, and control; 2. Model(s) representing the prime mover, governor control system, and any other controls which impact the dynamic active real power or frequency performance due to a system disturbance (e.g., load controller), but excluding Automatic Generation Control~~;~~ ~~3. .Model Validation of the positive sequence dynamic model(s) of this Table 1.1 response using the recorded response of a dynamic active power or frequency event from a staged test or using a measured system disturbance in which~~	If required by its Transmission Planner under Requirement R1, Part ~~1.1~~1.1.1, Generator Owner(s) or Transmission Owner(s) shall submit: 1. Model(s) representing enabled excitation limiters; 2. Model(s) representing enabled AC over- voltage, AC under-voltage, enabled over-frequency, under-frequency, over-speed, under-speed, Volts per Hertz protective functions, out of step protection that trip the excitation system, the prime mover, or generator/synchronous condenser either directly or via lockout or auxiliary tripping relays.

~~[12] Generator Model Validation shall be completed in conjunction with excitation system Model Validation and governor control Model Validation.~~

		~~perceived frequency deviates per Attachment 2, Note 1.~~	

Table 1.2
Applicability:
Facility Sections 4.2.5 and 4.2.6
~~FACTs~~FACTS Devices ~~identified~~Identified in Facility Section 4.2.3.2
HVDC Systems ~~identified~~Identified in Facility Section 4.2.4

The facility	Volt/VAR Control	Frequency/ Power Control[~~13~~10]	Additional Limiting and Protective Functions
1. Manufacturer 2. Model Number 3. Software/Firmware versions for applicable facility's a. IBR unit(s) b. FACTS device(s) c. VSC HVDC d. LCC HVDC e. Power plant controller(s)	1. Model(s) representing associated reactive power/voltage control as applicable for the specific facility or equipment. a. In the case of IBR, the model shall include: i. IBR unit(s) electronic control ii. The facility's power plant control iii. Supplemental reactive power ~~resources~~ devices and their control b. Other equipment which impacts facility voltage and reactive power dynamic response. ~~2. Model Validation of the positive sequence dynamic model(s) above in Table 1.2 Volt/ Var 1, response using the recorded~~	1. Model(s) representing the associated active power/frequency control including the specific facility or equipment. a. In the case of the IBR, the model shall include: i. IBR unit(s) electronic control ii. The facility's power plant control b. Other equipment which impacts facility active power or grid frequency dynamic response. ~~2. Model Validation of the positive sequence dynamic model of Table 1.2 Frequency/Power Control response using the recorded response of a dynamic~~	1. Model(s) representing enabled limiting functions, which limit active or reactive output of the IBR unit or facility. Limiting functions include active or reactive power limiting, active or reactive current limiting, or other limiting functions as may be involved in active or reactive power prioritization, ramping, disturbance ride-through and post-disturbance recovery behaviors. 2. Model(s) representing enabled protection functions that directly trip IBR unit(s) or facility, to include AC over-voltage and under-voltage

[~~13~~10] Not applicable for ~~FACTs~~FACTS Devices identified in Facility Section 4.2.3.2

	~~response of a dynamic reactive power or voltage event from either a staged test or using a measured system disturbance.~~	~~active power or frequency event from either a staged test or using a measured system disturbance in which the power plant controller's or some other facility's active power controller's perceived frequency deviates per Attachment 2, Note 1.~~	protection, and over-frequency and under-frequency protection.

Attachment 2: Periodicity

MOD-026-2 Attachment 2 Periodicity		
Row Number	**~~Modeling~~Triggering Condition**	**Required Action**
1	Establishing the initial verification date for an applicable facility. (Applies to ~~Requirements~~Requirement R2 and Requirement R3)	For Requirement R2, transmit the ~~verified~~ model(s) and accompanying ~~information~~documentation meeting Requirement R2, Parts 2.1 through 2.3 to its Transmission Planner in accordance with the date(s) of the Implementation Plan. For Requirement R3, transmit the ~~verified~~ model(s) and accompanying ~~information~~documentation meeting Requirement R3, Parts 3.1 through 3.5 to its Transmission Planner in accordance with the date of the Implementation Plan or within 365 calendar days after the Transmission Planner identifies the facility as an applicable facility in accordance with Requirement R1, Part ~~1.2~~1.2.1, whichever is later.
2	Initial verification for a newly commissioned facility. (Applies to Requirement R2 and Requirement R3)	Transmit the ~~verified model~~model(s) and accompanying ~~information~~documentation meeting Requirement R2, Parts 2.1 through 2.3 and, if applicable, Requirement R3, Parts 3.1 through 3.5 to its Transmission Planner within 365 calendar days after the ~~commissioning~~commercial operation date.

MOD-026-2 Attachment 2 Periodicity		
Row Number	**~~Modeling~~Triggering Condition**	**Required Action**
3	Subsequent Model Validation and Model Verification for an applicable facility. (Applies to Requirement R2 and Requirement R3~~, Parts 3.2-3.6~~)	Transmit the ~~verified model~~model(s) and accompanying ~~information~~documentation meeting Requirement R2, Parts 2.1 through 2.3 and, if applicable, Requirement R3, Parts 3.1 through 3.5 to its Transmission Planner within 10 calendar years of the most recent transmittal. ~~For the transmittal to reset the 10-year anniversary transmittal date for Requirement R2 and Requirement R3 (Model Validation and Model Verification Requirements) within 10 calendar years of the most recent transmittal, all model(s) and model parameters must be verified according to the applicable requirement(s) and included in the transmittal.~~
4	Applicable facility with installed and operating recording equipment does not experience a frequency excursion as applicable per ~~Attachment~~Footnote 2~~, Note 1~~ by the date otherwise required to meet the dates per Attachment 2, Rows 1, 2, or 3~~, 5, or 6~~. (Applies to Requirement R2 and Requirement R3) This row applies only if a frequency excursion from a system disturbance that meets Footnote 2 is selected for the validation method because a unit is unable to accept a frequency or speed test signal to perform Model Validation by a stage test.	Requirement R2, Part 2.3.2 and Requirement R3, Part 3.3.2 are met with a written statement transmitted to its Transmission Planner. Transmit the ~~verified~~ model meeting Requirement R2, Parts 2.1 through 2.3 or Requirement R3, Parts 3.1 through 3.5 and accompanying information to its Transmission Planner on or before 365 calendar days after a frequency excursion per ~~Attachment~~Footnote 2~~, Note 1~~ occurs and the recording equipment captures the applicable facility's ~~Real Power~~active power response as expected.

MOD-026-2 Attachment 2 Periodicity		
Row Number	**~~Modeling~~Triggering Condition**	**Required Action**
~~6~~5	For an existing applicable facility with a change to in-service equipment as described under Requirement R4. (Applies to Requirement R4)	~~Transmit the verified model (Model Validation and Model Verification components) and accompanying information or a plan for to provide a verified model to its Transmission Planner within 180 calendar days after the facility is returned to service subsequent to making a change to in-service equipment. If a plan to verify the model is provided to its Transmission Planner, then Row 7 also applies.~~ In order for the transmittal to reset the 10-year anniversary transmittal date for Requirement R2 and Requirement R3 as described in Row 3, all model(s) and model parameters must be verified according to the applicable requirement(s) and included in the transmittal.
~~7~~	~~The Generator Owner or Transmission Owner has provided a plan to verify the model.~~ ~~(Applies to Requirements R4 and Requirement R6)~~	~~Transmit the updated verified model and accompanying information to its Transmission Planner within 365 calendar days after the submittal of the plan to verify the model.~~
~~8~~	~~The Transmission Planner has received model(s) and accompanying information submitted under Requirement R2, Requirement R3, or Requirement R6.~~ ~~(Applies to Requirement R5)~~	~~Transmission Planner provides a written response to the submitter within 120 calendar days from receiving each submission, per Requirement R5.~~
~~9~~	~~The Generator Owner or Transmission Owner receives a notification of denial under Requirement R5 or a request for model review from its Transmission Planner.~~ ~~(Applies to Requirement R6)~~	~~Provide a written response to its Transmission Planner within 120 calendar days of receiving a notification of denial or request for model review, per Requirement R6.~~

MOD-026-2 Attachment 2 Periodicity		
Row Number	**~~Modeling~~Triggering Condition**	**Required Action**
~~10~~6	Existing, new, or upgraded synchronous generating unit or synchronous condenser that is equivalent to other unit(s) at the same physical location. AND Each unit has the same MVA nameplate rating~~.~~; AND The nameplate rating is ≤ 350 MVA~~.~~; AND Each unit has the same components, ratings, and settings~~.~~; AND The model for one of these equivalent units has been verified. (Applies to Requirement R2~~, Attachment 1, Table 1.1~~)	~~Document circumstance with~~Provide a written ~~statement~~explanation and include with the ~~verified~~ model~~,~~(s) and accompanying documentation~~, and data~~ provided to its Transmission Planner for the ~~verified~~ equivalent unit. ~~Verify the model(s) of~~Model Verification and Model Validation shall be performed for a different equivalent unit during each 10-year ~~verification~~ period.
~~11~~7	Applicable facility is not responsive to voltage excursion events during normal operation~~.~~; OR New or existing applicable ~~Facility~~facility does not have an installed closed loop voltage or reactive power control function or has a disabled closed loop voltage or reactive power control system function. (Applies to Requirement R2, ~~Attachment 1, Table 1.1, column 2; Attachment 1, Table 1.2, column 2;~~Part 2.3.1 or Requirement R3, Part ~~3.4~~3.3.1)	Requirement R2, ~~Attachment 1, Table 1.1, column 2; Attachment 1, Table 1.2, column 2;~~Part 2.3.1 or Requirement R3, Part ~~3.4 are~~3.3.1 is met with a written statement to that effect transmitted to its Transmission Planner. ~~Perform verification per the periodicity specified in Row 2 for a "Newly commissioned facility" (or new equipment) if the exemption verification condition no longer applies.~~

MOD-026-2 Attachment 2 Periodicity		
Row Number	**~~Modeling~~Triggering Condition**	**Required Action**
~~12~~8	Applicable ~~Facility~~facility is not designed to be responsive to frequency excursion events during normal operation. (The applicable ~~Facility~~facility does not operate in a frequency control mode, except during normal start up and shut down, that would result in a prime mover/governor and load control or active power/frequency control mode response.) OR New or existing applicable ~~Facility~~facility does not have an installed frequency control system or has a disabled frequency control system. (Applies to Requirement R2, ~~Attachment 1, Table 1.1, column 3; Attachment 1, Table 1.2, column 3;~~Part 2.3.2 or Requirement R3, Part ~~3.5~~3.3.2) If the applicable ~~Facility~~facility is operating in a frequency control mode that is responsive to a frequency excursion event in only one direction (over- or under-frequency), then Requirement R2, ~~Attachment 1, Table 1.1, column 3; Attachment 1, Table 1.2, column 3;~~Part 2.3.2 and Requirement R3, Part ~~3.5~~3.3.2 are still applicable.	Requirement R2, ~~Attachment 1, Table 1.1, column 3; Attachment 1, Table 1.2, column 3;~~Part 2.3.2 or Requirement R3, Part ~~3.4 are~~3.3.2 is met with a written statement to that effect transmitted to its Transmission Planner. ~~Perform verification per the periodicity specified in Row 2 for a "Newly commissioned facility" (or new equipment) if the exemption verification condition no longer applies.~~

MOD-026-2 Attachment 2 Periodicity		
Row Number	**~~Modeling~~Triggering Condition**	**Required Action**
~~13~~9	Existing applicable unit or facility, excluding synchronous condensers, FACTS devices, and HVDC facilities, has a current average net capacity factor over the most recent three calendar years, beginning on January 1 and ending on December 31, of 5% or less. (Requirement R2 or Requirement R3 periodicity exemption of Row 3; does not exempt obligation under Requirement R4 or Requirement R6.)	Requirements R2 or Requirement R3 are met with a written statement to that effect transmitted to its Transmission Planner annually. If the current average net capacity factor over the most recent three calendar years exceeds 5%, then transmit the model(s) and accompanying documentation meeting Requirement R2, Parts 2.1 through 2.3 and, if applicable, Requirement R3, Parts 3.1 through 3.5 within 365 calendar days ~~Model Verification must be performed to meet the required action of Row 3~~. For the definition of net capacity[~~14~~11] factor refer to Appendix F of the GADS Data Reporting Instructions.[~~15~~12]

[~~14~~11] Net Capacity Factor: **NCF** = [**Σ** (**Net Actual Generation**) / **Σ** (**N**et **M**aximum **C**apacity **x P**eriod **H**ours)] **x 100**%
Where, Period Hours = 8760 x 3 = 26280. In the case of batteries, the absolute value of discharging and charging shall be summed into Net Actual Generation.
[~~15~~12] Refer to Appendix F of the GADS Conventional Data Reporting Instructions.
https://www.nerc.com/pa/RAPA/gads/DataReportingInstructions/Appendix_F_Equations_2025_DRI.pdf

MOD-026-2 Attachment 2 Periodicity		
Row Number	**~~Modeling~~Triggering Condition**	**Required Action**
~~14~~	~~Commissioning date of the applicable legacy facility (before the effective date of MOD-026-2);~~ ~~OR~~ ~~The original equipment manufacturer (OEM) is no longer doing business in North America;~~ ~~OR~~ ~~The OEM no longer supports model(s) for in-service equipment at the Facility.~~ ~~(Requirement R3 exemption)~~	~~Requirement R3 is met with a written statement to that effect transmitted to its Transmission Planner.~~ ~~If the OEM that commissioned the Facility was acquired, merged, or operating under a different name, the new company would be considered the OEM.~~
~~**NOTE 1:**~~ ~~Unit Model Validation frequency excursion criteria:~~ ~~• ≥ 0.05 hertz deviation (nadir point) from scheduled frequency for the Eastern Interconnection with the applicable facility operating in a frequency responsive mode.~~ ~~• ≥ 0.10 hertz deviation (nadir point) from scheduled frequency for the ERCOT and Western Interconnections with the applicable facility operating in a frequency responsive mode.~~ ~~• ≥ 0.15 hertz deviation (nadir point) from scheduled frequency for the Quebec Interconnection with the applicable facility operating in a frequency responsive mode.~~		