

Violation Risk Factors — Version 1 Standards Pre-ballot Matrix

The following table lists the Violation Risk Factors (VRFs) for the requirements in the following Version 1 Modeling standards:

MOD-013 — Maintenance and Distribution of Dynamics Data Requirements and Reporting Procedures

MOD-016 — Documentation of Data Reporting Requirements for Actual and Forecast Demands, Net Energy for Load, and Controllable Demand-side Management

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

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

These VRFs are the weighted average of the stakeholder VRF selections from the second posting of the Version 1 VRF survey.

MOD-013 — Maintenance and Distribution of Dynamics Data Requirements and Reporting Procedures			
MOD-013-1	R1.	The Regional Reliability Organization, in coordination with its Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners, shall develop comprehensive dynamics data requirements and reporting procedures needed to model and analyze the dynamic behavior or response of each of the NERC Interconnections: Eastern, Western, and ERCOT. Within an Interconnection, the Regional Reliability Organizations shall jointly coordinate on the development of the data requirements and reporting procedures for that Interconnection. Each set of Interconnection-wide dynamics data requirements shall include the following dynamics data requirements:	MEDIUM
MOD-013-1	R1.1.	Design data shall be provided for new or refurbished excitation systems (for synchronous generators and synchronous condensers) at least three months prior to the installation date.	MEDIUM
MOD-013-1	R1.1.1.	If design data is unavailable from the manufacturer 3 months prior to the installation date, estimated or typical manufacturer's data, based on excitation systems of similar design and characteristics, shall be provided.	LOWER
MOD-013-1	R1.2.	Unit-specific dynamics data shall be reported for generators and synchronous condensers (including, as appropriate to the model, items such as inertia constant, damping coefficient, saturation parameters, and direct and quadrature axes reactances and time constants), excitation systems, voltage regulators, turbine-governor systems, power system stabilizers, and other associated generation equipment.	MEDIUM
MOD-013-1	R1.2.1.	Estimated or typical manufacturer's dynamics data, based on units of similar design and characteristics, may be submitted when unit-specific dynamics data cannot be obtained. In no case shall other than unit-specific data be reported for generator units installed after 1990.	MEDIUM
MOD-013-1	R1.2.2.	The Interconnection-wide requirements shall specify unit size thresholds for permitting: The use of non-detailed vs. detailed models, The netting of small generating units with bus load, and	LOWER

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MOD-013 — Maintenance and Distribution of Dynamics Data Requirements and Reporting Procedures			
		The combining of multiple generating units at one plant.	
MOD-013-1	R1.3.	Device specific dynamics data shall be reported for dynamic devices, including, among others, static VAR controllers, high voltage direct current systems, flexible AC transmission systems, and static compensators.	MEDIUM
MOD-013-1	R1.4.	Dynamics data representing electrical Demand characteristics as a function of frequency and voltage.	LOWER
MOD-013-1	R1.5.	Dynamics data shall be consistent with the reported steady-state (power flow) data supplied per Reliability Standard MOD-010 Requirement 1.	MEDIUM
MOD-013-1	R2.	The Regional Reliability Organization shall participate in the documentation of its Interconnection's data requirements and reporting procedures and, shall participate in the review of those data requirements and reporting procedures (at least every five years), and shall provide those data requirements and reporting procedures to Regional Reliability Organizations, NERC, and all users of the Interconnected systems on request (within five business days).	LOWER

MOD-016 — Documentation of Data Reporting Requirements for Actual and Forecast Demands, Net Energy for Load, and Controllable Demand-side Management			
MOD-016-1	R1.	The Planning Authority and Regional Reliability Organization shall have documentation identifying the scope and details of the actual and forecast (a) Demand data, (b) Net Energy for Load data, and (c) controllable DSM data to be reported for system modeling and reliability analyses.	LOWER
MOD-016-1	R1.1.	The aggregated and dispersed data submittal requirements shall ensure that consistent data is supplied for Reliability Standards TPL-005, TPL-006, MOD-010, MOD-011, MOD-012, MOD-013, MOD-014, MOD-015, MOD-016, MOD-017, MOD-018, MOD-019, MOD-020, and MOD-021. The data submittal requirements shall stipulate that each Load-Serving Entity count its customer Demand once and only once, on an aggregated and dispersed basis, in developing its actual and forecast customer Demand values.	LOWER
MOD-016-1	R2.	The Regional Reliability Organization shall distribute its documentation required in Requirement 1 and any changes to that documentation, to all Planning Authorities that work within its Region. the Regional Reliability Organization shall make this distribution within 30 calendar days of approval. The Planning Authority shall distribute its documentation required in R1 for reporting customer data and any changes to that documentation, to its Transmission Planners and Load-Serving Entities that work within its Planning Authority Area. The Planning Authority shall make this distribution within 30 calendar days of approval.	LOWER

MOD-024 — Verification of Generator Gross and Net Real Power Capability			
MOD-024-1	R1.	The Regional Reliability Organization shall establish and maintain procedures to address verification of generator gross and net Real Power capability. These procedures shall include the following:	MEDIUM
MOD-024-1	R1.1.	Generating unit exemption criteria including documentation of those units that are exempt from a portion or all of these procedures.	MEDIUM
MOD-024-1	R1.2.	Criteria for reporting generating unit auxiliary loads.	LOWER
MOD-024-1	R1.3.	Acceptable methods for model and data verification, including any applicable conditions under which the data should be verified. Such methods can include use of manufacturer data, commissioning data, performance tracking, and testing, etc.	MEDIUM
MOD-024-1	R1.4.	Periodicity and schedule of model and data verification and reporting.	MEDIUM
MOD-024-1	R1.5.	Information to be verified and reported:	MEDIUM
MOD-024-1	R1.5.1.	Seasonal gross and net Real Power generating capabilities.	MEDIUM
MOD-024-1	R1.5.2.	Real power requirements of auxiliary loads.	LOWER
MOD-024-1	R1.5.3.	Method of verification, including date and conditions.	MEDIUM
MOD-024-1	R2.	The Regional Reliability Organization shall provide its generator gross and net Real Power capability verification and reporting procedures, and any changes to those procedures, to the Generator Owners, Generator Operators, Transmission Operators, Planning Authorities, and Transmission Planners affected by the procedure within 30 calendar days of the approval.	LOWER
MOD-024-1	R3.	The Generator Owner shall follow its Regional Reliability Organization's procedures for verifying and reporting its gross and net Real Power generating capability per R1.	MEDIUM

MOD-025 — Verification of Generator Gross and Net Reactive Power Capability			
MOD-025-1	R1.	The Regional Reliability Organization shall establish and maintain procedures to address verification of generator gross and net Reactive Power capability. These procedures shall include the following:	LOWER
MOD-025-1	R1.1.	Generating unit exemption criteria including documentation of those units that are exempt from a portion or all of these procedures.	LOWER
MOD-025-1	R1.2.	Criteria for reporting generating unit auxiliary loads.	LOWER
MOD-025-1	R1.3.	Acceptable methods for model and data verification, including any applicable conditions under which the data should be verified. Such methods can include use of commissioning data, performance tracking, engineering analysis, testing, etc.	LOWER
MOD-025-1	R1.4.	Periodicity and schedule of model and data verification and reporting.	LOWER
MOD-025-1	R1.5.	Information to be reported:	LOWER
MOD-025-1	R1.5.1.	Verified maximum gross and net Reactive Power capability (both lagging and leading) at Seasonal Real Power generating	LOWER

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MOD-025 — Verification of Generator Gross and Net Reactive Power Capability			
		capabilities as reported in accordance with Reliability Standard MOD-024 Requirement 1.5.1.	
MOD-025-1	R1.5.2.	Verified Reactive Power limitations, such as generator terminal voltage limitations, shorted rotor turns, etc.	LOWER
MOD-025-1	R1.5.2.	Verified Reactive Power of auxiliary loads.	LOWER
MOD-025-1	R1.5.4.	Method of verification, including date and conditions.	LOWER
MOD-025-1	R2.	The Regional Reliability Organization shall provide its generator gross and net Reactive Power capability verification and reporting procedures, and any changes to those procedures, to the Generator Owners, Generator Operators, Transmission Operators, Planning Authorities, and Transmission Planners affected by the procedure within 30 calendar days of the approval.	LOWER
MOD-025-1	R3.	The Generator Owner shall follow its Regional Reliability Organization's procedures for verifying and reporting its gross and net Reactive Power generating capability per R1.	LOWER