

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 Facility Ratings standards:

- FAC-008-1 — Facility Ratings Methodology
- FAC-009-1 — Establish and Communicate Facility Ratings
- FAC-010-1 — System Operating Limits Methodology for the Planning Horizon
- FAC-011-1 — System Operating Limits Methodology for the Operations Horizon
- FAC-012-1 — Transfer Capabilities Methodology
- FAC-013-1 — Establish and Communicate Transfer Capabilities
- FAC-014-1 — Establish and Communicate System Operating Limits

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

FAC-008-1 — Facility Ratings Methodology			
FAC-008-1	R1.	The Transmission Owner and Generator Owner shall each document its current methodology used for developing Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned Facilities. The methodology shall include all of the following:	LOWER
FAC-008-1	R1.1.	A statement that a Facility Rating shall equal the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.	LOWER
FAC-008-1	R1.2.	The method by which the Rating (of major BES equipment that comprises a Facility) is determined.	LOWER
FAC-008-1	R1.2.1.	The scope of equipment addressed shall include, but not be limited to, generators, transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.	LOWER
FAC-008-1	R1.2.2.	The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.	LOWER
FAC-008-1	R1.3.	Consideration of the following:	LOWER
FAC-008-1	R1.3.1.	Ratings provided by equipment manufacturers.	MEDIUM
FAC-008-1	R1.3.2.	Design criteria (e.g., including applicable references to industry Rating practices such as manufacturer's warranty, IEEE, ANSI or other standards).	MEDIUM
FAC-008-1	R1.3.3.	Ambient conditions.	MEDIUM
FAC-008-1	R1.3.4.	Operating limitations.	MEDIUM
FAC-008-1	R1.3.5.	Other assumptions.	LOWER
FAC-008-1	R2.	The Transmission Owner and Generator Owner shall each make its Facility Ratings Methodology available for inspection and technical review by those Reliability Coordinators, Transmission Operators, Transmission Planners, and Planning Authorities that have responsibility for the area in which the associated Facilities are located, within 15 business days of receipt of a request.	LOWER
FAC-008-1	R3.	If a Reliability Coordinator, Transmission Operator, Transmission	LOWER

FAC-008-1 — Facility Ratings Methodology			
		Planner, or Planning Authority provides written comments on its technical review of a Transmission Owner's or Generator Owner's Facility Ratings Methodology, the Transmission Owner or Generator Owner shall provide a written response to that commenting entity within 45 calendar days of receipt of those comments. The response shall indicate whether a change will be made to the Facility Ratings Methodology and, if no change will be made to that Facility Ratings Methodology, the reason why.	

FAC-009-1 — Establish and Communicate Facility Ratings			
FAC-009-1	R1.	The Transmission Owner and Generator Owner shall each establish Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology.	MEDIUM
FAC-009-1	R2.	The Transmission Owner and Generator Owner shall each provide Facility Ratings for its solely and jointly owned Facilities that are existing Facilities, new Facilities, modifications to existing Facilities and re-ratings of existing Facilities to its associated Reliability Coordinator(s), Planning Authority(ies), Transmission Planner(s), and Transmission Operator(s) as scheduled by such requesting entities.	MEDIUM

FAC-010-1 — System Operating Limits Methodology for the Planning Horizon			
FAC-010-1	R1	The Planning Authority shall have a documented SOL Methodology for use in developing SOLs within its Planning Authority Area. This SOL Methodology shall:	LOWER
FAC-010-1	R1.1	Be applicable for developing SOLs used in the planning horizon.	LOWER
FAC-010-1	R1.2	State that SOLs shall not exceed associated Facility Ratings.	LOWER
FAC-010-1	R1.3	Include a description of how to identify the subset of SOLs that qualify as IROLs.	LOWER
FAC-010-1	R2	The Planning Authority's SOL Methodology shall include a requirement that SOLs provide BES performance consistent with the following:	LOWER
FAC-010-1	R2.1	In the pre-contingency state, the BES shall demonstrate transient, dynamic and voltage stability; all Facilities shall be within their Facility Ratings and within their thermal, voltage and stability limits. In the determination of SOLs, the BES condition used shall reflect current or expected system conditions and shall reflect changes to system topology such as Facility outages.	MEDIUM
FAC-010-1	R2.2	Following the single Contingencies[1] identified in Requirement 2.2.1 through Requirement 2.2.3, the system shall demonstrate transient, dynamic and voltage stability; all Facilities shall be operating within their Facility Ratings and within their thermal, voltage and stability limits; and Cascading Outages or uncontrolled separation shall not occur.	MEDIUM
FAC-010-1	R2.2.1	Single line to ground or three-phase Fault (whichever is more severe), with Normal Clearing, on any Faulted generator, line, transformer, or shunt device.	MEDIUM

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FAC-010-1 — System Operating Limits Methodology for the Planning Horizon			
FAC-010-1	R2.2.2	Loss of any generator, line, transformer, or shunt device without a Fault.	MEDIUM
FAC-010-1	R2.2.3	Single pole block, with Normal Clearing, in a monopolar or bipolar high voltage direct current system.	MEDIUM
FAC-010-1	R2.3	Starting with all Facilities in service, the system's response to a single Contingency may include any of the following:	MEDIUM
FAC-010-1	R2.3.1	Planned or controlled interruption of electric supply to radial customers or some local network customers connected to or supplied by the Faulted Facility or by the affected area.	MEDIUM
FAC-010-1	R2.3.2	To prepare for the next Contingency, system adjustments may be made, including changes to generation, uses of the transmission system, and the transmission system topology.	MEDIUM
FAC-010-1	R2.4	Starting with all facilities in service, the system's response to one of the multiple Contingencies identified in Reliability Standard TPL-003, the system shall demonstrate dynamic and voltage stability; all Facilities shall be operating within their Facility Ratings and within their thermal, voltage and stability limits; and Cascading Outages or uncontrolled separation shall not occur.	MEDIUM
FAC-010-1	R2.5	In determining the system's response to a multiple Contingency, the following shall be acceptable:	MEDIUM
FAC-010-1	R2.5.1	Planned or controlled interruption of electric supply to customers (load shedding), the planned removal from service of certain generators, and/or the curtailment of contracted Firm (non-recallable reserved) electric power Transfers	MEDIUM
FAC-010-1	R3	The Planning Authority's SOL methodology, shall include, as a minimum, a description of the following, along with any reliability margins applied for each:	LOWER
FAC-010-1	R3.1.	Area of study (must include at least the entire Planning Authority Area as well as the critical modeling details from other Planning Authority Areas that would impact the Facility or Facilities under study).	LOWER
FAC-010-1	R3.2.	Selection of applicable Contingencies.	LOWER
FAC-010-1	R3.3.	Level of detail of system models used to determine SOLs.	LOWER
FAC-010-1	R3.4	Allowed uses of Special Protection Systems or Remedial Action Plans.	MEDIUM
FAC-010-1	R3.5	Anticipated transmission system configuration, generation dispatch and Load level.	LOWER
FAC-010-1	R3.6	Criteria for determining when violating a SOL qualifies as an Interconnection Reliability Operating Limit (IROL) and criteria for developing any associated IROL Tv.	LOWER
FAC-010-1	R4	The Planning Authority shall issue its SOL Methodology, and any change to that methodology, to all of the following prior to the effectiveness of the change:	LOWER
FAC-010-1	R4.1.	Each adjacent Planning Authority and each Planning Authority that indicated it has a reliability-related need for the methodology.	LOWER
FAC-010-1	R4.2.	Each Reliability Coordinator and Transmission Operator that operates any portion of the Planning Authority's Planning Authority	LOWER

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FAC-010-1 — System Operating Limits Methodology for the Planning Horizon			
		Area.	
FAC-010-1	R4.3.	Each Transmission Planner that works in the Planning Authority's Planning Authority Area.	LOWER
FAC-010-1	R5	If a recipient of the SOL Methodology provides documented technical comments on the methodology, the Planning Authority shall provide a documented response to that recipient within 45 calendar days of receipt of those comments. The response shall indicate whether a change will be made to the SOL Methodology and, if no change will be made to that SOL Methodology, the reason why.	LOWER

FAC-011-1 — System Operating Limits Methodology for the Operations Horizon			
FAC-011-1	R1	The Reliability Coordinator shall have a documented methodology for use in developing SOLs (SOL Methodology) within its Reliability Coordinator Area. This SOL Methodology shall:	LOWER
FAC-011-1	R1.1	Be applicable for developing SOLs used in the operations horizon.	LOWER
FAC-011-1	R1.2	State that SOLs shall not exceed associated Facility Ratings.	LOWER
FAC-011-1	R1.3	Include a description of how to identify the subset of SOLs that qualify as IROLs.	LOWER
FAC-011-1	R2	The Reliability Coordinator's SOL Methodology shall include a requirement that SOLs provide BES performance consistent with the following:	MEDIUM
FAC-011-1	R2.1	In the pre-contingency state, the BES shall demonstrate transient, dynamic and voltage stability; all Facilities shall be within their Facility Ratings and within their thermal, voltage and stability limits. In the determination of SOLs, the BES condition used shall reflect current or expected system conditions and shall reflect changes to system topology such as Facility outages.	MEDIUM
FAC-011-1	R2.2	Following the single Contingencies[1] identified in Requirement 2.2.1 through Requirement 2.2.3, the system shall demonstrate transient, dynamic and voltage stability; all Facilities shall be operating within their Facility Ratings and within their thermal, voltage and stability limits; and Cascading Outages or uncontrolled separation shall not occur.	MEDIUM
FAC-011-1	R2.2.1	Single line to ground or 3-phase Fault (whichever is more severe), with Normal Clearing, on any Faulted generator, line, transformer, or shunt device.	MEDIUM
FAC-011-1	R2.2.2	Loss of any generator, line, transformer, or shunt device without a Fault.	MEDIUM
FAC-011-1	R2.2.3	Single pole block, with Normal Clearing, in a monopolar or bipolar high voltage direct current system.	MEDIUM
FAC-011-1	R2.3	In determining the system's response to a single Contingency, the following shall be acceptable:	MEDIUM
FAC-011-1	R2.3.1	Planned or controlled interruption of electric supply to radial customers or some local network customers connected to or supplied by the Faulted Facility or by the affected area.	MEDIUM
FAC-011-1	R2.3.2	Interruption of other network customers, only if the system has already been adjusted, or is being adjusted, following at least one	MEDIUM

FAC-011-1 — System Operating Limits Methodology for the Operations Horizon			
		prior outage, or, if the real-time operating conditions are more adverse than anticipated in the corresponding studies, e.g., load greater than studied.	
FAC-011-1	R2.3.3	System reconfiguration through manual or automatic control or protection actions.	MEDIUM
FAC-011-1	R2.4	To prepare for the next Contingency, system adjustments may be made, including changes to generation, uses of the transmission system, and the transmission system topology.	MEDIUM
FAC-011-1	R3	The Reliability Coordinator's methodology for determining SOLs, shall include, as a minimum, a description of the following, along with any reliability margins applied for each:	MEDIUM
FAC-011-1	R3.1.	Area of study (must include at least the entire Reliability Coordinator Area as well as the critical modeling details from other Reliability Coordinator Areas that would impact the Facility or Facilities under study.)	MEDIUM
FAC-011-1	R3.2.	Selection of applicable Contingencies.	MEDIUM
FAC-011-1	R3.3.	A process for determining which of the stability limits associated with the list of multiple contingencies (provided by the Planning Authority in accordance with FAC-014 Requirement 6) are applicable for real-time use given the real-time system conditions. The process shall address recalculating these stability limits and expanding this list of stability limits and the list of stability-related multiple contingencies.	MEDIUM
FAC-011-1	R3.4	Level of detail of system models used to determine SOLs.	
FAC-011-1	R3.5	Allowed uses of Special Protection Systems or Remedial Action Plans.	MEDIUM
FAC-011-1	R3.6	Anticipated transmission system configuration, generation dispatch and Load level.	MEDIUM
FAC-011-1	R3.7	Criteria for determining when violating a SOL qualifies as an Interconnection Reliability Operating Limit (IROL) and criteria for developing any associated IROL Tv.	MEDIUM
FAC-011-1	R4	The Reliability Coordinator shall issue its SOL Methodology and any changes to that methodology, prior to the effectiveness of the Methodology or of a change to the Methodology, to all of the following:	LOWER
FAC-011-1	R4.1.	Each adjacent Reliability Coordinator and each Reliability Coordinator that indicated it has a reliability-related need for the methodology.	LOWER
FAC-011-1	R4.2.	Each Planning Authority and Transmission Planner that models any portion of the Reliability Coordinator's Reliability Coordinator Area.	LOWER
FAC-011-1	R4.3.	Each Transmission Operator that operates in the Reliability Coordinator Area.	LOWER
FAC-011-1	R5	If a recipient of the SOL Methodology provides documented technical comments on the methodology, the Reliability Coordinator shall provide a documented response to that recipient within 45 calendar days of receipt of those comments. The response shall indicate whether a change will be made to the SOL	LOWER

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FAC-011-1 — System Operating Limits Methodology for the Operations Horizon			
		Methodology and, if no change will be made to that SOL Methodology, the reason why.	

FAC-012-1 — Transfer Capabilities Methodology			
FAC-012-1	R1.	The Reliability Coordinator and Planning Authority shall each document its current methodology used for developing its inter-regional and intra-regional Transfer Capabilities (Transfer Capability Methodology). The Transfer Capability Methodology shall include all of the following:	LOWER
FAC-012-1	R1.1.	A statement that Transfer Capabilities shall respect all applicable System Operating Limits (SOLs).	LOWER
FAC-012-1	R1.2.	A definition stating whether the methodology is applicable to the planning horizon or the operating horizon.	
FAC-012-1	R1.3.	A description of how each of the following is addressed, including any reliability margins applied to reflect uncertainty with projected BES conditions:	LOWER
FAC-012-1	R1.3.1.	Transmission system topology	LOWER
FAC-012-1	R1.3.2.	System demand	LOWER
FAC-012-1	R1.3.3.	Generation dispatch	LOWER
FAC-012-1	R1.3.4.	Current and projected transmission uses	LOWER
FAC-012-1	R2.	The Reliability Coordinator shall issue its Transfer Capability Methodology, and any changes to that methodology, prior to the effectiveness of such changes, to all of the following:	LOWER
FAC-012-1	R2.1	Each Adjacent Reliability Coordinator and each Reliability Coordinator that indicated a reliability-related need for the methodology.	LOWER
FAC-012-1	R2.2	Each Planning Authority and Transmission Planner that models any portion of the Reliability Coordinator's Reliability Coordinator Area.	
FAC-012-1	R2.3	Each Transmission Operator that operates in the Reliability Coordinator Area.	LOWER
FAC-012-1	R3.	The Planning Authority shall issue its Transfer Capability Methodology, and any changes to that methodology, prior to the effectiveness of such changes, to all of the following:	LOWER
FAC-012-1	R3.1.	Each Transmission Planner that works in the Planning Authority's Planning Authority Area.	LOWER
FAC-012-1	R3.2.	Each Adjacent Planning Authority and each Planning Authority that indicated a reliability-related need for the methodology.	LOWER
FAC-012-1	R3.3.	Each Reliability Coordinator and Transmission Operator that operates any portion of the Planning Authority's Planning Authority Area.	LOWER
FAC-012-1	R4.	If a recipient of the Transfer Capability Methodology provides documented technical comments on the methodology, the Reliability Coordinator or Planning Authority shall provide a documented response to that recipient within 45 calendar days of receipt of those comments. The response shall indicate whether a change will be made to the Transfer Capability Methodology and,	LOWER

FAC-012-1 — Transfer Capabilities Methodology			
		if no change will be made to that Transfer Capability Methodology, the reason why.	

FAC-013-1 — Establish and Communicate Transfer Capabilities			
FAC-013-1	R1.	The Reliability Coordinator and Planning Authority shall each establish a set of inter-regional and intra-regional Transfer Capabilities that is consistent with its current Transfer Capability Methodology.	MEDIUM
FAC-013-1	R2.	The Reliability Coordinator and Planning Authority shall each provide its inter-regional and intra-regional Transfer Capabilities to those entities that have a reliability-related need for such Transfer Capabilities and make a written request that includes a schedule for delivery of such Transfer Capabilities as follows:	MEDIUM
FAC-013-1	R2.1.	The Reliability Coordinator shall provide its Transfer Capabilities to its associated Regional Reliability Organization(s), to its adjacent Reliability Coordinators, and to the Transmission Operators, Transmission Service Providers and Planning Authorities that work in its Reliability Coordinator Area.	MEDIUM
FAC-013-1	R2.2.	The Planning Authority shall provide its Transfer Capabilities to its associated Reliability Coordinator(s) and Regional Reliability Organization(s), and to the Transmission Planners and Transmission Service Provider(s) that work in its Planning Authority Area.	MEDIUM

FAC-014-1 — Establish and Communicate System Operating Limits			
FAC-014-1	R1	The Reliability Coordinator shall ensure that SOLs, including Interconnection Reliability Operating Limits (IROLs), for its Reliability Coordinator Area are established and that the SOLs (including Interconnection Reliability Operating Limits) are consistent with its SOL Methodology.	MEDIUM
FAC-014-1	R2	The Transmission Operator shall establish SOLs (as directed by its Reliability Coordinator) for its portion of the Reliability Coordinator Area that are consistent with its Reliability Coordinator's SOL Methodology.	MEDIUM
FAC-014-1	R3	The Planning Authority shall establish SOLs, including IROLs, for its Planning Authority Area that are consistent with its SOL Methodology.	MEDIUM
FAC-014-1	R4	The Transmission Planner shall establish SOLs, including IROLs, for its Transmission Planning Area that are consistent with its Planning Authority's SOL Methodology.	MEDIUM
FAC-014-1	R5	The Reliability Coordinator, Planning Authority and Transmission Planner shall each provide its SOLs and IROLs to those entities that have a reliability-related need for those limits and provide a written request that includes a schedule for delivery of those limits as follows:	MEDIUM
FAC-014-1	R5.1	The Reliability Coordinator shall provide its SOLs (including the subset of SOLs that are IROLs) to adjacent Reliability	MEDIUM

FAC-014-1 — Establish and Communicate System Operating Limits			
		Coordinators and Reliability Coordinators who indicate a reliability-related need for those limits, and to the Transmission Operators, Transmission Planners, Transmission Service Providers and Planning Authorities within its Reliability Coordinator Area. For each IROL, the Reliability Coordinator shall provide the following supporting information:	
FAC-014-1	R5.1.1	Identification and status of the associated Facility (or group of Facilities) that is (are) critical to the derivation of the IROL.	MEDIUM
FAC-014-1	R5.1.2	The value of the IROL and its associated Tv.	MEDIUM
FAC-014-1	R5.1.3	The associated Contingency(ies).	MEDIUM
FAC-014-1	R5.1.4	The type of limitation represented by the IROL (e.g., voltage collapse, angular stability).	MEDIUM
FAC-014-1	R5.2	The Transmission Operator shall provide any SOLs it developed to its Reliability Coordinator and to the Transmission Service Providers that share its portion of the Reliability Coordinator Area.	MEDIUM
FAC-014-1	R5.3	The Planning Authority shall provide its SOLs (including the subset of SOLs that are IROLs) to adjacent Planning Authorities, and to Transmission Planners, Transmission Service Providers, Transmission Operators and Reliability Coordinators that work within its Planning Authority Area.	MEDIUM
FAC-014-1	R5.4	The Transmission Planner shall provide its SOLs (including the subset of SOLs that are IROLs) to its Planning Authority, Reliability Coordinators, Transmission Operators, and Transmission Service Providers that work within its Transmission Planning Area and to adjacent Transmission Planners.	MEDIUM
FAC-014-1	R6	The Planning Authority shall identify the subset of multiple contingencies from Reliability Standard TPL-003 which result in stability limits.	MEDIUM
FAC-014-1	R6.1	The Planning Authority shall provide this list of multiple contingencies and the associated stability limits to the Reliability Coordinators that monitor the facilities associated with these contingencies and limits.	MEDIUM