

Review of FAC-010-2.1—System Operating Limits Methodology for the Planning Horizon (Filing 2)

<http://www.nerc.com/files/FAC-010-2.1.pdf>

VSLs for Requirement R2:

Standard, Requirement	Requirement Language	Lower	Moderate	High	Severe	Comments
FAC-010-2.1, R2	<p>The Planning Authority's SOL Methodology shall include a requirement that SOLs provide BES performance consistent with the following:</p> <p>R2.1. In the pre-contingency state and with all Facilities in service, 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</p>	The Planning Authority's SOL Methodology is missing one requirement as described in R2.1, R2.2, R2.3, R2.4, R2.5, or R2.6.	The Planning Authority's SOL Methodology is missing two requirements as described in R2.1, R2.2, R2.3, R2.4, R2.5, or R2.6.	The Planning Authority's SOL Methodology is missing three requirements as described in R2.1, R2.2, R2.3, R2.4, R2.5, or R2.6.	The Planning Authority's SOL Methodology is missing four or more requirements as described in R2.1, R2.2, R2.3, R2.4, R2.5, or R2.6.	<p>FERC staff was concerned about the relationships between the sub-requirements and the sub-sub-requirements and the VSL assignments for the main requirement.</p> <p>NERC staff confirmed that a violation of a sub-requirement counts as a violation of the main requirement in this roll-up. It's typical that if you violate a sub requirement (or a sub-requirement of that sub-requirement), you have violated the requirement. Even in this case, with many</p>

	<p>condition used shall reflect expected system conditions and shall reflect changes to system topology such as Facility outages.</p> <p>R2.2. Following the single Contingencies 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 or uncontrolled separation shall not occur.</p> <p>R2.2.1. Single line to ground or three-phase Fault (whichever is more severe), with Normal</p>					<p>sub-requirements and sub-sub-requirements, this is the appropriate way to do it. No change proposed.</p>
--	---	--	--	--	--	---

	<p>Clearing, on any Faulted generator, line, transformer, or shunt device.</p> <p>R2.2.2. Loss of any generator, line, transformer, or shunt device without a Fault.</p> <p>R2.2.3. Single pole block, with Normal Clearing, in a monopolar or bipolar high voltage direct current system.</p> <p>R2.3. Starting with all Facilities in service, the system's response to a single Contingency, may include any of the following:</p> <p>R2.3.1. Planned or controlled interruption of electric supply to radial customers or some local network customers connected to or supplied by the</p>					
--	--	--	--	--	--	--

	<p>Faulted Facility or by the affected area.</p> <p>R2.3.2. System reconfiguration through manual or automatic control or protection actions.</p> <p>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.</p> <p>R2.5. Starting with all Facilities in service and following any of the multiple Contingencies identified in Reliability Standard TPL-003 the system shall demonstrate transient, dynamic and voltage stability; all Facilities shall be</p>					
--	---	--	--	--	--	--

	<p>operating within their Facility Ratings and within their thermal, voltage and stability limits; and Cascading or uncontrolled separation shall not occur.</p> <p>R2.6. In determining the system’s response to any of the multiple Contingencies, identified in Reliability Standard TPL-003, in addition to the actions identified in R2.3.1 and R2.3.2, the following shall be acceptable:</p> <p>R2.6.1. Planned or controlled interruption of electric supply to customers (load shedding), the planned removal from service of certain generators, and/or the</p>					
--	---	--	--	--	--	--

	curtailment of contracted Firm (non-recallable reserved) electric power Transfers.					
--	--	--	--	--	--	--

Original Guideline Explanation for R2 VSLs in [December 1, 2010 VSL Filing 2](#):

In accordance with Guidelines 2 and 3, the VSLs from the previous version of the standard were modified for clarity and consistency with other VSLs and standards and the language in the requirement. Consistent with Guidelines filed with FERC on August 10, 2009, incorporated the subrequirements into the main requirement VSL from the previous version of the standard so that compliance is based on meeting criteria specified in components.

- *Guideline 1:* The proposed VSLs are consistent with, and improve upon, the original Levels of Non- Compliance established for version 1 of this standard. Therefore, actual compliance should stay the same or improve.
- *Guideline 2:* The VSLs comply with Guideline 2. The requirement has gradated VSLs; therefore, Guideline 2a is not applicable. The gradated VSLs ensure uniformity and consistency among all approved Reliability Standards in the determination of penalties. Thus, no changes to the VSLs were required. Additionally, NERC has reviewed the VSL text and has determined that, with the correction of typographical errors, stylistic edits or format changes, the VSL text is clear, specific and objective and does not contain general, relative or subjective language satisfying Guideline 2b. Thus, the text is not subject to the possibility of multiple interpretations of the VSL and provides the clarity needed to permit the consistent and objective application of the VSL in the determination of penalties by the Compliance Enforcement Authority.
- *Guideline 3:* NERC reviewed the existing requirement VSLs to the stated requirement language to ensure the VSLs do not redefine or undermine the requirement's reliability goal. The VSLs were slightly modified from the previous version of the standard for consistency with the language in the requirement. In accordance with Guideline3, the VSL assignments are now consistent with the requirement and the degree of compliance can be determined objectively and with certainty.
- *Guideline 4:* The VSL assignments comply with Guideline 4, because they are based on a single violation of a Reliability Standard and are not based on a cumulative number of violations of the same requirement over a period of time.