NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Project 2014-03 – Revisions to TOP and IRO Reliability Standards

Mapping Document | Updated August 2014

This mapping document showing the translation of Requirements in the following currently-enforceable standards to revised or new standards developed in Project 2014-03:

- IRO-001-1.1 — Reliability Coordination - Responsibilities and Authorities
- IRO-002-2 — Reliability Coordination - Facilities
- IRO-003-2 — Reliability Coordination – Wide-Area View
- IRO-004-2 — Reliability Coordination — Operations Planning
- IRO-005-3.1a — Reliability Coordination - Current Day Operations
- IRO-008-1 — Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-010-1a — Reliability Coordinator Data Specification and Collection
- IRO-014-1 — Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators
- IRO-015-1 — Notifications and Information Exchange Between Reliability Coordinators
- IRO-016-1 — Coordination of Real-time Activities Between Reliability Coordinators
- PER-001-0.2 — Operating Personnel Responsibility and Authority
- TOP-001-1a — Reliability Responsibilities and Authorities
- TOP-002-2.1b — Normal Operations Planning
- TOP-003-1 — Planned Outage Coordination
- TOP-004-2 — Transmission Operations
- TOP-005-2a — Operational Reliability Information
- TOP-006-3 — Monitoring System Conditions[1]
- TOP-007-0 — Reporting System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) Violations
- TOP-008-1 — Response to Transmission Limit Violations

[1] TOP-006-2 is the currently enforceable version of this standard; TOP-006-3 was developed in response to a request for interpretation seeking clarification of Requirement R1 and does not substantively change the Requirements of TOP-006-2. In its NOPR proposing to remand the TOP and IRO standard, FERC proposed to approve TOP-006-3. The drafting team has mapped the Requirements in the new standards to TOP-006-3 because the Parts of Requirement R1 in TOP-006-3 more clearly delineate which entity has responsibility.

Standard IRO-001-1.1 — Reliability Coordination - Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Regional Reliability Organization, subregion, or interregional coordinating group shall establish one or more Reliability Coordinators to continuously assess transmission reliability and coordinate emergency operations among the operating entities within the region and across the regional boundaries.	The SDT proposes retiring the requirement as it is addressed in the NERC Rules of Procedure, January 30, 2014: **Section 503.2 (2.1)** "Regional Entities shall verify that all Reliability Coordinators, Balancing Authorities, and Transmission Operators meet the Registration requirements of Section 501(1.4)." **Section 501 (1.4)** "**1.4** For all geographical or electrical areas of the Bulk Power System, the Registration process shall ensure that (1) no areas are lacking any entities to perform the duties and tasks identified in and required by the Reliability Standards to the fullest extent practical, and (2) there is no unnecessary duplication of such coverage or of required oversight of such coverage. In particular the process shall: **1.4.1** Ensure that all areas are under the oversight of one and only one Reliability Coordinator. **1.4.2** Ensure that all Balancing Authorities and Transmission operator entities are under the responsibility of one and only one Reliability Coordinator. **1.4.3** Ensure that all transmission Facilities of the Bulk Power System are the responsibility and under the control of one and only one Transmission Planner, Planning Authority, and Transmission Operator. **1.4.4** Ensure that all loads and generators are under the responsibility and control of one and only one Balancing Authority."
R2. The Reliability Coordinator shall comply with a regional reliability plan approved by the NERC Operating Committee.	**The SDT is proposing to retire this requirement.** The SDT proposes retiring Requirement R2 as the regional reliability plan is a high level overview "how" document that shows how a Reliability Coordinator will comply with other NERC Standards. As a result, this requirement is administrative and redundant to other measureable and enforceable requirements within the standards. Since the requirement is generally administrative, it does not materially impact the reliability of the BES. The Reliability Plan concept is a holdover from the transition period from the Operating Policies to the Version 0 standards and was used extensively in the readiness evaluation process by the Operating Committee. The template used for the Reliability Plan is actually an outline of Operating Policy 9. The material included in the plan was a description of how an entity satisfied the specific functional areas under Policy 9. With the transition of Policy 9 to the IRO and other standards, the items addressed in

Standard IRO-001-1.1 — Reliability Coordination - Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	the reliability plans are inherently addressed in the body of other more measurable Reliability Standards.
R3. The Reliability Coordinator shall have clear decision-making authority to act and direct actions to be taken by Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities and Purchasing-Selling Entities within its Reliability Coordinator Area to preserve the integrity and reliability of the Bulk Electric System. These actions shall be taken without delay, but no longer than 30 minutes.	**This requirement is replaced by proposed IRO-001-4, Requirements R1 and R2.** The SDT does not believe that there is a need for a decision-making authority requirement as the decision-making authority is inherent when the requirement states that the Reliability Coordinator must act, or by issuing Operating Instructions. **Proposed IRO-001-4, Requirements R1 and R2:** **R1**. Each Reliability Coordinator shall act to address the reliability of its Reliability Coordinator Area via direct actions or by issuing Operating Instructions. **R2.** Each Transmission Operator, Balancing Authority, Generator Operator, and Distribution Provider shall comply with its Reliability Coordinator's Operating Instructions unless compliance with the Operating Instructions cannot be physically implemented or unless such actions would violate safety, equipment, regulatory, or statutory requirements.
R4. Reliability Coordinators that delegate tasks to other entities shall have formal operating agreements with each entity to which tasks are delegated. The Reliability Coordinator shall verify that all delegated tasks are understood, communicated, and addressed within its Reliability Coordinator Area. All responsibilities for complying with NERC and regional standards applicable to Reliability Coordinators shall remain with the Reliability Coordinator.	**The SDT is proposing to retire this requirement.** The SDT contends that approved IRO-001-1.1, Requirement R4 is redundant with NERC Rules of Procedure, Section 500 (January 30, 2014) and should be retired from the standard. **(Section 501)** "The purpose of the Organization Registration Program is to clearly identify those entities that are responsible for compliance with the FERC approved Reliability Standards. Organizations that are registered are included on the NERC Compliance Registry (NCR) and are responsible for knowing the content of and for complying with all applicable Reliability Standards." **(Section 508)** Provisions Relating to Coordinated Functional Registration (CFR) Entities In addition to registering as an entity responsible for all functions that it performs itself, multiple entities may each register using a CFR for one or more Reliability Standard(s) and/or for one or more Requirements/sub-Requirements within particular Reliability Standard(s) applicable to a specific function. The CFR submission must include a written agreement that governs itself and clearly specifies the entities' respective compliance responsibilities. The Registration of the CFR is the complete

Standard IRO-001-1.1 — Reliability Coordination - Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Registration for each entity. Additionally, each entity shall take full compliance responsibility for those Reliability Standards and/or Requirements/sub-Requirements it has registered for in the CFR. Neither NERC nor the Regional Entity shall be parties to any such agreement, nor shall NERC or the Regional Entity have responsibility for reviewing or approving any such agreement, other than to verify that the agreement provides for an allocation or assignment of responsibilities consistent with the CFR.
R5. The Reliability Coordinator shall list within its reliability plan all entities to which the Reliability Coordinator has delegated required tasks.	The SDT is proposing to retire this requirement consistent with Paragraph 81 criteria as it is strictly administrative in nature.
R6. The Reliability Coordinator shall verify that all delegated tasks are carried out by NERC-certified Reliability Coordinator operating personnel.	The SDT is proposing to retire this requirement. The Reliability Coordinator may delegate tasks but cannot delegate the responsibility for these tasks. Therefore, it is not necessary to mandate that delegated tasks must be carried out by certified personnel as it is the responsibility of the Reliability Coordinator to ensure that the task is carried out.
R7. The Reliability Coordinator shall have clear, comprehensive coordination agreements with adjacent Reliability Coordinators to ensure that System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) violation mitigation requiring actions in adjacent Reliability Coordinator Areas are coordinated.	This requirement is replaced by proposed IRO-014-3, Requirement R1. **Proposed IRO-014-3, Requirement R1:** **R1.** Each Reliability Coordinator shall have and implement Operating Procedures, Operating Processes, or Operating Plans, for activities that require notification or coordination of actions that may impact adjacent Reliability Coordinator Areas, to support Interconnection reliability.
R8: Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall comply with Reliability Coordinator directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances, the Transmission Operator, Balancing Authority, Generator Operator, Transmission Service Provider, Load-Serving Entity, or Purchasing-Selling Entity shall immediately inform the Reliability Coordinator of the inability to perform the directive so that the Reliability	This requirement is replaced by proposed IRO-001-4, Requirements R2 and R3. **Proposed IRO-001-4, Requirements R2 and R3:** **R2.** Each Transmission Operator, Balancing Authority, Generator Operator, and Distribution Provider shall comply with its Reliability Coordinator's Operating Instructions unless compliance with the Operating Instructions cannot be physically implemented or unless such actions would violate safety, equipment, regulatory, or statutory requirements. **R3.** Each Transmission Operator, Balancing Authority, Generator Operator, and Distribution Provider shall inform its Reliability Coordinator upon recognition of its inability to perform an Operating Instruction in accordance with Requirement R2.

Standard IRO-001-1.1 — Reliability Coordination - Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
Coordinator may implement alternate remedial actions.	
R9. The Reliability Coordinator shall act in the interests of reliability for the overall Reliability Coordinator Area and the Interconnection before the interests of any other entity.	The SDT is proposing to retire this requirement as it is redundant with the definition of Reliability Coordinator in Functional Model v5. The NERC Functional Model Version 5 defines the Reliability Coordinator function as follows: "The functional entity that maintains the Real-time operating reliability of the Bulk Electric System within a Reliability Coordinator Area." An entity performing Reliability Coordinator services must meet this definition.

Standard IRO-002-2 — Reliability Coordination – Facilities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.	The first sentence of this requirement is replaced by proposed COM-001-2 Requirement R1 for voice links and proposed IRO-002-2 Requirement R1 for data links. The second sentence of this requirement is covered by approved PER-004-2 Requirement R1 so to eliminate redundancy, that part of the requirement is not proposed to be replaced. **Proposed COM-001-2, Requirement R1:** **R1.** Each Reliability Coordinator shall have Interpersonal Communication capability with the following entities (unless the Reliability Coordinator detects a failure of its Interpersonal Communication capability in which case Requirement R10 shall apply): 1.1 All Transmission Operators and Balancing Authorities within its Reliability Coordinator Area. 1.2 Each adjacent Reliability Coordinator within the same Interconnection. **Proposed IRO-002-4, Requirement R1:** **R1.** Each Reliability Coordinator shall have data exchange capabilities with its Balancing Authorities and Transmission Operators, and with other entities it deems necessary, for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. **Approved PER-004-2, Requirement R1:** **R1.** Each Reliability Coordinator shall be staffed with adequately trained and NERC-certified Reliability Coordinator operators, 24 hours per day, seven days per week.
R2. Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.	This requirement is replaced by proposed IRO-010-2, Requirements R1 and R3, Part 3.3. **Proposed IRO-010-2, Requirements R1 and R3, Part 3.3:** **R1.** The Reliability Coordinator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. **R3.** Part 3.3. A mutually agreeable security protocol
R3. Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability	This requirement is replaced by proposed COM-001-2 Requirement R1 and proposed IRO-002-4 Requirement R2. **Proposed COM-001-2, Requirement R1:**

Standard IRO-002-2 — Reliability Coordination – Facilities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.	**R1.** Each Reliability Coordinator shall have Interpersonal Communication capability with the following entities (unless the Reliability Coordinator detects a failure of its Interpersonal Communication capability in which case Requirement R10 shall apply): 1.1 All Transmission Operators and Balancing Authorities within its Reliability Coordinator Area. 1.2 Each adjacent Reliability Coordinator within the same Interconnection. **Proposed IRO-002-4, Requirement R2:** **R2**. Each Reliability Coordinator shall have data exchange capabilities with Balancing Authorities and Transmission Operators, and with other entities it deems necessary, for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.
R4. Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.	This requirement is replaced by proposed IRO-002-4, Requirements R3 and R4. **Proposed IRO-002-4, Requirements R3 and R4:** **R3.** Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area. **R4.** Each Reliability Coordinator shall have monitoring systems that provide information utilized by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant infrastructure.
R5. Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to	This requirement is replaced by proposed IRO-002-4, Requirement R3. **Proposed IRO-002-4, Requirement R3:** **R3.** Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area.

Standard IRO-002-2 — Reliability Coordination – Facilities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.	
R6. Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.	This requirement is replaced by proposed IRO-008-5, Requirement R5 and the proposed definition of Real-time Assessment. **Proposed IRO-008, Requirement R4:** **R4**. Each Reliability Coordinator shall ensure that a Real-time Assessment is performed at least once every 30 minutes. **Proposed definition:** **Real-time Assessment** - An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load, generation output levels, known Protection System and Special Protection System status or degradation, Transmission outages, generator outages, Interchange, Facility Ratings, and identified phase angle and equipment limitations. (Real-time Assessment may be provided through internal systems or through third-party services.)
R7. Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.	This requirement is replaced by proposed IRO-002-4, Requirement R3 and approved EOP-008-1, Requirement R1, Part 1.6.2. **Proposed IRO-002-4, Requirement R3:** **R3**. Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area. **Approved EOP-008-1, Requirement R1, Part 1.6.2:** **R1. Part 1.6.2**. Actions to manage the risk to the BES during the transition from primary to backup functionality as well as during outages of the primary or backup functionality.
R8. Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have	This requirement is replaced by proposed IRO-002, Requirement R2 and approved EOP-008-1, Requirement R1, Part 1.6.2. **Proposed IRO-002-4, Requirement R2:**

Standard IRO-002-2 — Reliability Coordination – Facilities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
procedures in place to mitigate the effects of analysis tool outages.	**R2.** Each Reliability Coordinator shall provide its System Operators with the authority to approve planned outages and maintenance of its telecommunications, monitoring and analysis capabilities. **Approved EOP-008-1, Requirement R1, Part 1.6.2:** **R1. Part 1.6.2.** Actions to manage the risk to the BES during the transition from primary to backup functionality as well as during outages of the primary or backup functionality.

Standard IRO-003-2 — Reliability Coordination - Wide-Area View	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Reliability Coordinator shall monitor all Bulk Electric System facilities, which may include sub-transmission information, within its Reliability Coordinator Area and adjacent Reliability Coordinator Areas, as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.	Replaced with proposed IRO-002-4, Requirement R3. **Proposed IRO-002-4, Requirement R3:** **R3**. Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area.
R2. Each Reliability Coordinator shall know the current status of all critical facilities whose failure, degradation or disconnection could result in an SOL or IROL violation. Reliability Coordinators shall also know the status of any facilities that may be required to assist area restoration objectives.	Replaced with proposed IRO-002-4, Requirement R3 and revised definitions of Operational Planning Analysis and Real-time Assessment. **Proposed IRO-002-4, Requirement R3:** **R3**. Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area. **Proposed definition:** **Operational Planning Analysis -** An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day

Standard IRO-003-2 — Reliability Coordination - Wide-Area View	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	operations. The evaluation shall reflect applicable inputs including, but not limited to, load forecasts; generation output levels; Interchange; known Protection System and Special Protection System status or degradation; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.) **Proposed definition:** **Real-time Assessment** - An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load, generation output levels, known Protection System and Special Protection System status or degradation, Transmission outages, generator outages, Interchange, Facility Ratings, and identified phase angle and equipment limitations. (Real-time Assessment may be provided through internal systems or through third-party services.)
Standard IRO-004-2 — Reliability Coordination - Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.	This requirement is replaced by proposed IRO-001-4, Requirement R1 since Operating Instructions, regardless of what timeframe they are issued for, are issued in a Real-time environment. In addition, roles for entities identified in the Operating Plans built from Operational Planning Analyses are communicated in proposed IRO-008-2, Requirement R3. **Proposed IRO-001-4, Requirement R1:** R1. Each Reliability Coordinator shall act to address the reliability of its Reliability Coordinator Area via direct actions or by issuing Operating Instructions. **Proposed IRO-008-2, Requirement R3:** R3. Each Reliability Coordinator shall notify impacted entities identified in its Operating Plan(s) cited in Requirement R2 as to their role in that plan(s).

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following: **R1.1** Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading. **R1.2.** Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope. **R1.3.** Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope. **R1.4.** System real and reactive reserves (actual versus required). **R1.5**. Capacity and energy adequacy conditions. **R1.6.** Current ACE for all its Balancing Authorities. **R1.7**. Current local or Transmission Loading Relief procedures in effect. **R1.8.** Planned generation dispatches. **R1.9.** Planned transmission or generation outages. **R1.10.** Contingency events.	Replaced by proposed IRO-002-4, Requirements R3 and R4. **Proposed IRO-002-4, Requirement R3:** **R3.** Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area. **Proposed IRO-002-4, Requirement R4:** **R4**. Each Reliability Coordinator shall have monitoring systems that provide information utilized by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant infrastructure.
R2. Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard (CPS) and	The first sentence is replaced by proposed IRO-002-4, Requirement R3. The second sentence is covered by approved EOP-002-3.1a, Requirement R8 and can be retired. **Proposed IRO-002-4 Requirement, R3**:

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
Disturbance Control Standard (DCS) requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.	**R3.** Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area. **Approved EOP-002-3.1a, Requirement R8:** **R8.** A Reliability Coordinator that has any Balancing Authority within its Reliability Coordinator area experiencing a potential or actual Energy Emergency shall initiate an Energy Emergency Alert as detailed in Attachment 1-EOP-002 “Energy Emergency Alerts.” The Reliability Coordinator shall act to mitigate the emergency condition, including a request for emergency assistance if required.
R3. Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.	The SDT proposes retiring this requirement as it has been superseded by approved EOP-010-1, Requirements R1 through R3. **Approved EOP-010-1, Requirements R1 to R3:** **R1** Each Reliability Coordinator shall develop, maintain, and implement a GMD Operating Plan that coordinates GMD Operating Procedures or Operating Processes within its Reliability Coordinator Area. At a minimum, the GMD Operating Plan shall include: **1.1** A description of activities designed to mitigate the effects of GMD events on the reliable operation of the interconnected transmission system within the Reliability Coordinator Area. **1.2** A process for the Reliability Coordinator to review the GMD Operating Procedures or Operating Processes of Transmission Operators within its Reliability Coordinator Area. **R2.** Each Reliability Coordinator shall disseminate forecasted and current space weather information to functional entities identified as recipients in the Reliability Coordinator's GMD Operating Plan. **R3.** Each Transmission Operator shall develop, maintain, and implement a GMD Operating Procedure or Operating Process to mitigate the effects of GMD events on the reliable

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	operation of its respective system. At a minimum, the Operating Procedure or Operating Process shall include: **3.1.** Steps or tasks to receive space weather information. **3.2**. System Operator actions to be initiated based on predetermined conditions. **3.3**. The conditions for terminating the Operating Procedure or Operating Process.
R4. The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.	This requirement has been replaced by proposed IRO-008-2, Requirements R3, R5 and R6. **Proposed IRO-008-2, Requirement R3:** **R3.** Each Reliability Coordinator shall notify impacted entities identified in its Operating Plan(s) cited in Requirement R2 as to their role in that plan(s). **Proposed IRO-008-2, Requirement R5:** **R5.** Each Reliability Coordinator shall notify impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the results of a Real-time Assessment indicate an actual or expected condition that results in, or could result in, a System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance within its Wide Area. **Proposed IRO-008-2, Requirement R6:** **R6.** Each Reliability Coordinator shall notify impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance identified in Requirement R5 has been prevented or mitigated.
R5. Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.	This requirement is replaced by proposed IRO-001-4, Requirement R1 and proposed IRO-002-34 Requirements R3 and R4. **Proposed IRO-001-4, Requirement R1:** **R1.** Each Reliability Coordinator shall act to address the reliability of its Reliability Coordinator Area via direct actions or by issuing Operating Instructions.

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed IRO-002-4, Requirement R3: **R3.** Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area. **Proposed IRO-002-4, Requirement R4:** **R4.** Each Reliability Coordinator shall have monitoring systems that provide information utilized by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant infrastructure.
R6. The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.	The first sentence is replaced with proposed IRO-008-2, Requirement R2. The issue of CPS and DCS is covered in approved EOP-002-3.1, Requirements R6, R7, and R8. The second sentence is replaced by the proposed IRO-017-1, Requirement R1 as well as through the proposed definitions of Operational Planning Analysis and Real-time Assessments. Generator Operators are not included in proposed IRO-017-1 as the SDT believes that Generator Operator outage information will be sent to the respective Transmission Operators and Balancing Authorities and then sent on to the Reliability Coordinators through those entities. **Proposed IRO-008-2, Requirement R2:** **R2**. Each Reliability Coordinator shall have a coordinated Operating Plan(s) for next-day operations to address potential System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) exceedances identified as a result of its Operational Planning Analysis as performed in Requirement R1 while considering the Operating Plans for the next-day provided by its Transmission Operators and Balancing Authorities. **Proposed definition:** **Operational Planning Analysis -** An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	operations. The evaluation shall reflect applicable inputs including, but not limited to, load forecasts; generation output levels; Interchange; known Protection System and Special Protection System status or degradation; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.) **Proposed definition:** **Real-time Assessment** - An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load, generation output levels, known Protection System and Special Protection System status or degradation, Transmission outages, generator outages, Interchange, Facility Ratings, and identified phase angle and equipment limitations. (Real-time Assessment may be provided through internal systems or through third-party services.) **Proposed IRO-017-1, Requirement R1:** **R1.** Each Reliability Coordinator shall develop, implement, and maintain an outage coordination process for generation and Transmission outages within its Reliability Coordinator Area. **Approved EOP-002-3.1, Requirements R6, R7, and R8:** **R6.** If the Balancing Authority cannot comply with the Control Performance and Disturbance Control Standards, then it shall immediately implement remedies to do so. These remedies include, but are not limited to: R6.1. Loading all available generating capacity. **R6.2**. Deploying all available operating reserve. **R6.3.** Interrupting interruptible load and exports. **R6.4.** Requesting emergency assistance from other Balancing Authorities. **R6.5**. Declaring an Energy Emergency through its Reliability Coordinator; and **R6.6.** Reducing load, through procedures such as public appeals, voltage reductions, curtailing interruptible loads and firm loads.

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	R7. Once the Balancing Authority has exhausted the steps listed in Requirement 6, or if these steps cannot be completed in sufficient time to resolve the emergency condition, the Balancing Authority shall: R7.1. Manually shed firm load without delay to return its ACE to zero; and **R7.2**. Request the Reliability Coordinator to declare an Energy Emergency Alert in accordance with Attachment 1-EOP-002 "Energy Emergency Alerts." **R8.** A Reliability Coordinator that has any Balancing Authority within its Reliability Coordinator area experiencing a potential or actual Energy Emergency shall initiate an Energy Emergency Alert as detailed in Attachment 1-EOP-002 "Energy Emergency Alerts." The Reliability Coordinator shall act to mitigate the emergency condition, including a request for emergency assistance if required.
R8. The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.	The first sentence is replaced by proposed IRO-002-4, Requirements R3 and R4. The second sentence is replaced by proposed IRO-001-4, Requirement R1. **Proposed IRO-002-4, Requirement R3:** **R3**. Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area. **Proposed IRO-002-4, Requirement R4:** **R4.** Each Reliability Coordinator shall have monitoring systems that provide information utilized by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant infrastructure. **Proposed IRO-001-4, Requirement R1:** **R1.** Each Reliability Coordinator shall act to address the reliability of its Reliability Coordinator Area via direct actions or by issuing Operating Instructions.
R9. Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator	The first sentence is replaced by proposed IRO-002-4, Requirements R3 and R4. The second sentence is replaced by proposed IRO-010-2, Requirements R1, Part 1.2, and R3.

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.	**Proposed IRO-002-4, Requirement R3:** **R3.** Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area. **Proposed IRO-002-4, Requirement R4:** **R4.** Each Reliability Coordinator shall have monitoring systems that provide information utilized by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant infrastructure. **Proposed IRO-010-4, Requirement R1, Part 1.2:** **R1**. The Reliability Coordinator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include but not be limited to: **1.2** Provisions for notification of current Protection System and Special Protection System status, failure, or degradation that impacts System reliability. **Proposed IRO-010-4, Requirement R3:** **R3**. Each Reliability Coordinator, Balancing Authority, Planning Coordinator, Transmission Planner, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications.
R10. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.	For Reliability Coordinators, this requirement is replaced by approved IRO-009-1, Requirement R5. For Transmission Operators, Balancing Authorities, and Generator Operators, this requirement is replaced by proposed TOP-001-3, Requirement R18. The Transmission Service Provider and Purchasing-Selling Entity will receive instructions on limits from the previously cited entities and can thus be deleted from the requirement. **Approved IRO-009-1, Requirement R5:**

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	R5. If unanimity cannot be reached on the value for an IROL or its Tv, each Reliability Coordinator that monitors that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration. **Proposed TOP-001-3, Requirement R18:** **R18**. Each Transmission Operator shall operate to the most limiting parameter in instances where there is a difference in SOLs.
R11. The Transmission Service Providers shall respect these SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.	This requirement is replaced by proposed MOD-001-2, Requirement R2. **Proposed MOD-001-2, Requirement R2:** **R2**. Each Transmission Service Provider that determines Available Flowgate Capability (AFC) or Available Transfer Capability (ATC) shall develop an Available Transfer Capability Implementation Document (ATCID) that describes the methodology (or methodologies) for determining AFC or ATC values. The methodology (or methodologies) shall reflect the Transmission Service Provider's current practices for determining AFC or ATC values. **2.1.** Each methodology shall describe the method used to account for the following elements, provided such elements impact the determination of AFC or ATC: **2.1.1.** The simulation of transfers performed through the adjustment of generation, Load, or both; **2.1.2.** Transmission topology, including, but not limited to, additions and retirements; **2.1.3.** Expected transmission uses; **2.1.4.** Planned outages**;** **2.1.5.** Parallel path (loop flow) adjustments; **2.1.6.** Load forecast; and **2.1.7.** Generator dispatch, including, but not limited to, additions and retirements. **2.2.** Each Transmission Service Provider that uses the Flowgate Methodology shall, for reliability-related constraints identified in part 1.3, use the AFC determined by the Transmission Service Provider for that constraint.
R12. Each Reliability Coordinator who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall	The requirement is replaced by proposed IRO-008-2, Requirements R3, R5, and R6. **Proposed IRO-008-2, Requirement R3:**

Standard IRO-005-3.1a — Reliability Coordination - Current Day Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.	**R3.** Each Reliability Coordinator shall notify impacted entities identified in its Operating Plan(s) cited in Requirement R2 as to their role in that plan(s). **Proposed IRO-008-2, Requirement R5:** **R5**. Each Reliability Coordinator shall notify impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the results of a Real-time Assessment indicate an actual or expected condition that results in, or could result in, a System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance within its Wide Area. **Proposed IRO-008-2, Requirement R6:** **R6**. Each Reliability Coordinator shall notify impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance identified in Requirement R5 has been prevented or mitigated.

IRO-008-1 Reliability Coordination Operational Analyses and Real-time Assessments	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.	This requirement is replaced by proposed IRO-008-2, Requirement R1. **Proposed IRO-008-2, Requirement R1:** **R1.** Each Reliability Coordinator shall perform an Operational Planning Analysis that will allow it to assess whether the planned operations for the next day will exceed System Operating Limits (SOLs) and Interconnection Operating Reliability Limits (IROLs) within its Wide Area.
R2. Each Reliability Coordinator shall perform a Real-Time Assessment at least once every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs.	This requirement is replaced by proposed IRO-008-2, Requirement R4. **Proposed IRO-008-2, Requirement R4:** **R4.** Each Reliability Coordinator shall ensure that a Real-time Assessment is performed at least once every 30 minutes.
R3. When a Reliability Coordinator determines that the results of an Operational Planning Analysis or Real-Time Assessment indicates the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL, the Reliability Coordinator shall share its results with those entities that are expected to take those actions.	This requirement is replaced by proposed IRO-008-2, Requirements R3 and R5. **Proposed IRO-008-2, Requirements R3 and R5:** **R3.** Each Reliability Coordinator shall notify impacted entities identified in its Operating Plan(s) cited in Requirement R2 as to their role in that plan(s). **Proposed IRO-008-2, R6:** **R5**. Each Reliability Coordinator shall notify impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the results of a Real-time Assessment indicate an actual or expected condition that results in, or could result in, a System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance within its Wide Area.

Standard IRO-010-1a Reliability Coordinator Data Specification and Collection	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following: **R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. **R1.2.** Mutually agreeable format. **R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses). **R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.	This requirement is replaced by proposed IRO-010-2, Requirements R1 and R3. **Proposed IRO-010-2, Requirement R1:** **R1.** The Reliability Coordinator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include but not be limited to: **1.1** A list of data and information needed by the Reliability Coordinator to support its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments including non-BES data and external network data, as deemed necessary by the Reliability Coordinator. **1.2** Provisions for notification of current Protection System and Special Protection System status, failure, or degradation that impacts System reliability. **1.3** A periodicity for providing data. **1.4** The deadline by which the respondent is to provide the indicated data. **Proposed IRO-010-2, Requirement R3:** **R3.** Each Reliability Coordinator, Balancing Authority, Planning Coordinator, Transmission Planner, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications using: **3.1** A mutually agreeable format **3.2** A mutually agreeable process for resolving data conflicts **3.3** A mutually agreeable security protocol
R2. The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.	This requirement is replaced by proposed IRO-010-2, Requirement R2. **Proposed IRO-010-2, Requirement R2:** **R2.** The Reliability Coordinator shall distribute its data specification to entities that have data required by the Reliability Coordinator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.

Standard IRO-010-1a Reliability Coordinator Data Specification and Collection	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship.	This requirement is replaced by proposed IRO-010-2, Requirement R3. **Proposed IRO-010-2, Requirement R3:** **R3.** Each Reliability Coordinator, Balancing Authority, Planning Coordinator, Transmission Planner, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications using: **3.1** A mutually agreeable format **3.2** A mutually agreeable process for resolving data conflicts **3.3** A mutually agreeable security protocol

Standard IRO-014-1 — Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. The Reliability Coordinator shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other Reliability Coordinators to support Interconnection reliability. These Operating Procedures, Processes, or Plans shall address Scenarios that affect other Reliability Coordinator Areas as well as those developed in coordination with other Reliability Coordinators **R1.1** These Operating Procedures, Processes, or Plans shall collectively address, as a minimum, the following: **R1.1.1** Communications and notifications, including the conditions under which one Reliability Coordinator notifies other Reliability Coordinators; the process to follow in making those notifications; and the data and	This requirement is replaced by proposed IRO-014-3, Requirement R1. Data is covered in proposed IRO-010-2, Requirement R1. **Proposed IRO-014-3, Requirement R1:** **R1.** Each Reliability Coordinator shall have and implement Operating Procedures, Operating Processes, or Operating Plans, for activities that require notification or coordination of actions that may impact adjacent Reliability Coordinator Areas, to support Interconnection reliability. These Operating Procedures, Operating Processes, or Operating Plans shall include, but are not limited to, the following: **1.1** Communications and notifications, and the process to follow in making those notifications. **1.2** Energy and capacity shortages. **1.3** Control of voltage, including the coordination of reactive resources. **1.4** Exchange of information including planned and unplanned outage information to support its Operational Planning Analyses and Real-time Assessments.

Standard IRO-014-1 — Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
information to be exchanged with other Reliability Coordinators. **R1.1.2** Energy and capacity shortages. **R1.1.3** Planned or unplanned outage information. **R1.1.4** Voltage control, including the coordination of reactive resources for voltage control. **R1.1.5** Coordination of information exchange to support reliability assessments. **R1.1.6** Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other Reliability Coordinator Areas.	**1.5** Authority to act to prevent and mitigate system conditions which could adversely impact other Reliability Coordinator Areas. **1.6** Provisions for weekly conference calls. **Proposed IRO-010-2, Requirement R1:** **R1**. The Reliability Coordinator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.
R2. Each Reliability Coordinator's Operating Procedure, Process, or Plan that requires one or more other Reliability Coordinators to take action (e.g., make notifications, exchange information, or coordinate actions) shall be: **R2.1.** Agreed to by all the Reliability Coordinators required to take the indicated action(s). **R2.2**. Distributed to all Reliability Coordinators that are required to take the indicated action(s).	This requirement is replaced by proposed IRO-014-3, Requirement R2. **Proposed IRO-014-3, Requirement R2:** **R2.** Each Reliability Coordinator shall maintain its Operating Procedure, Operating Process, or Operating Plan identified in Requirement R1 as follows: **2.1** Review and update annually with no more than 15 months between reviews. **2.2** Obtain written agreement from all of the Reliability Coordinators required to take the indicated action(s) for each update. **2.3** Distribute to all Reliability Coordinators that are required to take the indicated action(s) within 30 days of an update.
R3. A Reliability Coordinator's Operating Procedures, Processes, or Plans developed to support a Reliability Coordinator-to-Reliability Coordinator Operating Procedure, Process, or Plan shall include: **R3.1.** A reference to the associated Reliability Coordinator-to-Reliability Coordinator Operating Procedure, Process, or Plan.	R3.1 is a strictly administrative requirement with no reliability benefit and is proposed to be retired under the P81 criteria. R3.2 is replaced by proposed IRO-014-3, Requirement R1, Part 1.5. **Proposed IRO-014-3, Requirement R1**: **R1.** Each Reliability Coordinator shall have and implement Operating Procedures, Operating Processes, or Operating Plans, for activities that require notification or coordination of actions that may impact adjacent Reliability Coordinator Areas, to support Interconnection

Standard IRO-014-1 — Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R3.2. The agreed-upon actions from the associated Reliability Coordinator-to- Reliability Coordinator Operating Procedure, Process, or Plan.	reliability. These Operating Procedures, Operating Processes, or Operating Plans shall include, but are not limited to, the following: **1.1** Criteria and processes for notifications. **1.2** Energy and capacity shortages. **1.3** Control of voltage, including the coordination of reactive resources. **1.4** Exchange of information including planned and unplanned outage information to support its Operational Planning Analyses and Real-time Assessments. **1.5** Provisions for periodic communications to support reliable operations.
R4. Each of the Operating Procedures, Processes, and Plans addressed in Reliability Standard IRO-014 Requirement 1 and Requirement 3 shall: **R4.1.** Include version control number or date. **R4.2.** Include a distribution list. **R4.3**. Be reviewed, at least once every three years, and updated if needed	This requirement is proposed to be retired as it is strictly an administrative requirement with no reliability benefit.

Standard IRO-015-1 - Notifications and Information Exchange Between Reliability Coordinators	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. The Reliability Coordinator shall follow its Operating Procedures, Processes, or Plans for making notifications and exchanging reliability-related information with other Reliability Coordinators. **R1.1** The Reliability Coordinator shall make notifications to other Reliability Coordinators of conditions in its Reliability Coordinator Area that may impact other Reliability Coordinator Areas.	This requirement is replaced by proposed IRO-014-3, Requirement R1. **Proposed IRO-014-3, Requirement R1:** **R1.** Each Reliability Coordinator shall have and implement Operating Procedures, Operating Processes, or Operating Plans, for activities that require notification or coordination of actions that may impact adjacent Reliability Coordinator Areas, to support Interconnection reliability. These Operating Procedures, Operating Processes, or Operating Plans shall include, but are not limited to, the following:
R2. The Reliability Coordinator shall participate in agreed upon conference calls and other communication forums with adjacent Reliability Coordinators. **R2.1** The frequency of these conference calls shall be agreed upon by all involved Reliability Coordinators and shall be at least weekly.	This requirement is replaced by proposed IRO-014-3, Requirement R1, Part 1.5. **Proposed IRO-014-3, Requirement R1, Part 1.5:** **R1, Part 1.5:** Provisions for periodic communications to support reliable operations.
R3. A Generator Operator or Transmission Operator shall coordinate new protective systems and changes as follows. **R3.1**. Each Generator Operator shall coordinate all new protective systems and all protective system changes with its Transmission Operator and Host Balancing Authority. **R3.2.** Each Transmission Operator shall coordinate all new protective systems and all protective system changes with neighboring Transmission Operators and Balancing Authorities.	This requirement is replaced by approved PRC-001-1.1, Requirement R3. **Approved PRC-001-1.1, Requirement R3:** **R3.** A Generator Operator or Transmission Operator shall coordinate new protective systems and changes as follows. **3.1** Each Generator Operator shall coordinate all new protective systems and all protective system changes with its Transmission Operator and Host Balancing Authority. **3.2** Each Transmission Operator shall coordinate all new protective systems and all protective system changes with neighboring Transmission Operators and Balancing Authorities.

Standard IRO-016-1 - Coordination of Real-time Activities Between Reliability Coordinators	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. The Reliability Coordinator that identifies a potential, expected, or actual problem that requires the actions of one or more other Reliability Coordinators shall contact the other Reliability Coordinator(s) to confirm that there is a problem and then discuss options and decide upon a solution to prevent or resolve the identified problem. **R1.1** If the involved Reliability Coordinators agree on the problem and the actions to take to prevent or mitigate the system condition, each involved Reliability Coordinator shall implement the agreed-upon solution, and notify the involved Reliability Coordinators of the action(s) taken. **R1.2** If the involved Reliability Coordinators cannot agree on the problem(s) each Reliability Coordinator shall re-evaluate the causes of the disagreement (bad data, status, study results, tools, etc.). **R1.2.1** If time permits, this re-evaluation shall be done before taking corrective actions. **R1.2.2** If time does not permit, then each Reliability Coordinator shall operate as though the problem(s) exist(s) until the conflicting system status is resolved **R1.3** If the involved Reliability Coordinators cannot agree on the solution, the more conservative solution shall be implemented.	Proposed IRO-014-3, Requirements R3 through R6 are revised versions of approved IRO-016-1, Requirement R1 and its sub-requirements. **Proposed IRO-014-3, Requirement R3:** **R3.** Each Reliability Coordinator, upon identification of an expected or actual Emergency in its Reliability Coordinator Area, shall notify other impacted Reliability Coordinators. **Proposed IRO-014-3, Requirement R4:** **R4.** Each impacted Reliability Coordinator shall operate as though the Emergency exists during each instance where Reliability Coordinators disagree on the existence of an Emergency. **Proposed IRO-014-3, Requirement R5:** **R5**. Each Reliability Coordinator that Identifies an Emergency in its Reliability Coordinator Area shall develop an action plan to resolve the Emergency during those instances where impacted Reliability Coordinators disagree on the existence of an Emergency. **Proposed IRO-014-3, Requirement R6:** **R6.** Each impacted Reliability Coordinator shall implement the action plan developed by the Reliability Coordinator that identifies the Emergency during those instances where Reliability Coordinators disagree on the existence of an Emergency, unless such actions would violate safety, equipment, regulatory, or statutory requirements.
R2. The Reliability Coordinator shall document (via operator logs or other data sources) its actions taken for either the event or for the disagreement on the problem(s) or for both.	This retirement of this Requirement was approved by FERC effective January 21, 2014 as part of the Paragraph 81 Project.

Standard PER-001-0.2 – Operating Personnel Responsibility and Authority	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Transmission Operator and Balancing Authority shall provide operating personnel with the responsibility and authority to implement real-time actions to ensure the stable and reliable operation of the Bulk Electric System	The SDT is proposing to retire this requirement. In FERC Order 693a, paragraph 112, the Commission clarifies that a Reliability Coordinator's authority to issue directives arises out of the Commission's approval of Reliability Standards that mandate compliance with such directives. The SDT reasonably applied this same logic to Transmission Operators and Balancing Authorities and that makes this requirement superfluous and thus it can be deleted. FERC Order 693a, paragraph 112: In response to Avista, the Commission clarifies that a reliability coordinator's authority to issue directives arises out of the Commission's approval of Reliability Standards that mandate compliance with such directives. Avista is correct that contracts are unnecessary to authorize reliability coordinators to issue directives. Under the voluntary reliability scheme in place prior to section 215 of the FPA, a contractual basis was needed to assure that entities would comply with a reliability coordinator's directive. Pursuant to the current, mandatory reliability scheme established by statute, contracts are no longer needed. We view the concerns raised by Avista as part of the transition from a voluntary to mandatory scheme. Although, as noted by Avista, IRO-001-1 retains references to contracts, we view these as vestiges of an earlier program that no longer control given the current, mandatory mechanism.

Standard TOP-001-1a — Reliability Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Transmission Operator shall have the responsibility and clear decision-making authority to take whatever actions are needed to ensure the reliability of its area and shall exercise specific authority to alleviate operating emergencies.	This is a generic requirement that is no longer necessary since there are now specific requirements that cover all needed reliability actions. Deletion of this requirement doesn't alleviate responsibility for actions as each individual requirement in the Reliability Standards now specifies an action and a responsible entity. These needed actions required for reliability of the Bulk Power System have been more clearly laid out in revised standards. (See FERC Order 693a, paragraph 112.) The requirement is also non-specific, ambiguous, and not performance oriented. If an entity doesn't perform as specified in an individual requirement, then they are held accountable at that level. All of this makes this requirement redundant. The overall reliability of the Bulk Power System is not adversely affected by the deletion of this requirement. In FERC Order 693a, paragraph 112, the Commission clarifies that a Reliability Coordinator's authority to issue directives arises out of the Commission's approval of Reliability Standards that mandate compliance with such directives. The SDT believes that this same logic applies to Transmission Operators and Balancing Authorities, makes this requirement superfluous, and, thus, it can be deleted. FERC Order 693a, paragraph 112: "In response to Avista, the Commission clarifies that a reliability coordinator's authority to issue directives arises out of the Commission's approval of Reliability Standards that mandate compliance with such directives. Avista is correct that contracts are unnecessary to authorize reliability coordinators to issue directives. Under the voluntary reliability scheme in place prior to section 215 of the FPA, a contractual basis was needed to assure that entities would comply with a reliability coordinator's directive. Pursuant to the current, mandatory reliability scheme established by statute, contracts are no longer needed. We view the concerns raised by Avista as part of the transition from a voluntary to mandatory scheme. Although, as noted by Avista, IRO-001-1 retains references to contracts, we view these as vestiges of an earlier program that no longer control given the current, mandatory mechanism. The SDT does not believe that there is a need for a decision-making authority requirement as the decision-making authority is inherent in proposed TOP-001-4, Requirement R1 which states that the Transmission Operator must act or issue Operating Instructions.

Standard TOP-001-1a — Reliability Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed TOP-001-3, Requirement R1: **R1.** Each Transmission Operator shall act to address the reliability of its Transmission Operator Area via direct actions or by issuing Operating Instructions.
R2. Each Transmission Operator shall take immediate actions to alleviate operating emergencies including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding firm load, etc.	This requirement replaced by proposed TOP-001-3, Requirements R12 and R14. **Proposed TOP-001-3, Requirement R12:** **R12.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V. **Proposed TOP-001-3, Requirement R14:** **R14.** Each Transmission Operator shall initiate its Operating Plan to mitigate an SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment.
R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.	This requirement replaced by proposed IRO-001-2, Requirements R2 and R3 and proposed TOP-001-3, Requirements R3 and R4. Proposed IRO-001-2, R2: **Proposed IRO-001-2, Requirement R2:** **R2.** Each Transmission Operator, Balancing Authority, Generator Operator, Transmission Service Provider, and Distribution Provider shall comply with its Reliability Coordinator's Operating Instructions unless compliance with the Operating Instructions cannot be physically implemented or unless such actions would violate safety, equipment, regulatory, or statutory requirements. **Proposed IRO-001-2, Requirement R3:** **R3.** Each Transmission Operator, Balancing Authority, Generator Operator, Transmission Service Provider, and Distribution Provider shall inform its Reliability Coordinator upon recognition of its inability to perform an Operating Instruction in accordance with Requirement R2. **Proposed TOP-001-3, Requirement R3:** **R3.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall comply with each Operating Instruction issued by its Transmission Operator(s), unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements.

Standard TOP-001-1a — Reliability Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed TOP-001-3, Requirement R4: **R4.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall inform its Transmission Operator of its inability to perform an Operating Instruction issued by that Transmission Operator in Requirement R3.
R4. Each Distribution Provider and Load Serving Entity shall comply with all reliability directives issued by the Transmission Operator, including shedding firm load, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances, the Distribution Provider or Load Serving Entity shall immediately inform the Transmission Operator of the inability to perform the directive so that the Transmission Operator can implement alternate remedial actions.	This requirement replaced by proposed TOP-001-3, Requirements R3 and R4. **Proposed TOP-001-3, Requirements R3 and R4:** **R3.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall comply with each Operating Instruction issued by its Transmission Operator(s), unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements. Proposed TOP-001-3, R4: **R4.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall inform its Transmission Operator of its inability to perform an Operating Instruction issued by that Transmission Operator in Requirement R3.
R5. Each Transmission Operator shall inform its Reliability Coordinator and any other potentially affected Transmission Operators of real time or anticipated emergency conditions, and take actions to avoid, when possible, or mitigate the emergency.	This requirement replaced by proposed TOP-001-3, Requirements R8, R12, and R14. **Proposed TOP-001-3, Requirement R8:** **R8**. Each Transmission Operator shall inform its Reliability Coordinator, known impacted Balancing Authorities, and known impacted Transmission Operators of its actual or expected operations that result in, or could result in, an Emergency. **Proposed TOP-001-3, Requirement R12:** **R12.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V. **Proposed TOP-001-3, Requirement R14:** **R14.** Each Transmission Operator shall initiate its Operating Plan to mitigate an SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment.
R6. Each Transmission Operator, Balancing Authority, and Generator Operator shall render all available emergency	The Generator Operator was deleted from this requirement since it will only respond to such requests if they were in the form of an Operating Instruction from its Transmission Operator

Standard TOP-001-1a — Reliability Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
assistance to others as requested, provided that the requesting entity has implemented its comparable emergency procedures, unless such actions would violate safety, equipment, or regulatory or statutory requirements.	or Balancing Authority which is covered in proposed TOP-001-3, Requirements R3, R4, R5 and R6. Assistance at the Transmission Operator level is provided through proposed TOP-001-3, Requirement R7. 'Emergency' deleted as the assistance is assistance in response to the other entities' emergency. Balancing Authorities provide assistance under approved EOP-001-2.1b, Requirement R1. **Approved EOP-001.2.1b, Requirement R1:** **R1.** Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities**.** **Proposed TOP-001-3, Requirement R3:** **R3.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall comply with each Operating Instruction issued by its Transmission Operator(s), unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements. **Proposed TOP-001-3, Requirement R4:** R4. Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall inform its Transmission Operator of its inability to perform an Operating Instruction issued by that Transmission Operator in Requirement R3. **Proposed TOP-001-3, Requirement R5:** **R5.** Each Transmission Operator, Generator Operator, Distribution Provider, and Load-Serving Entity shall comply with each Operating Instruction issued by its Balancing Authority, unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements. **Proposed TOP-001-3, Requirement R6:** **R6.** Each Transmission Operator, Generator Operator, Distribution Provider, and Load-Serving Entity shall inform its Balancing Authority of its inability to perform an Operating Instruction issued by that Balancing Authority. **Proposed TOP-001-3, Requirement R7:**

Standard TOP-001-1a — Reliability Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	R7. Each Transmission Operator shall assist other Transmission Operators, if requested and available, provided that the requesting entity has implemented its emergency procedures, unless such assistance cannot be physically implemented or would violate safety, equipment, regulatory, or statutory requirements.
R7. Each Transmission Operator and Generator Operator shall not remove Bulk Electric System facilities from service if removing those facilities would burden neighboring systems unless: **R7.1** For a generator outage, the Generator Operator shall notify and coordinate with the Transmission Operator. The Transmission Operator shall notify the Reliability Coordinator and other affected Transmission Operators, and coordinate the impact of removing the Bulk Electric System facility. **R7.2** For a transmission facility, the Transmission Operator shall notify and coordinate with its Reliability Coordinator. The Transmission Operator shall notify other affected Transmission Operators, and coordinate the impact of removing the Bulk Electric System facility. **R7.3** When time does not permit such notifications and coordination, or when immediate action is required to prevent a hazard to the public, lengthy customer service interruption, or damage to facilities, the Generator Operator shall notify the Transmission Operator, and the Transmission Operator shall notify its Reliability Coordinator and adjacent Transmission Operators, at the earliest possible time.	The Generator Operator can't know if their actions will burden neighboring systems since they do not have reliability data. The Transmission Operator will know if the Generator Operator actions will burden neighboring systems and will receive this data through proposed TOP-003-3, Requirements R1 and R5 and is required to act on this information as per proposed TOP-001-3, Requirement R8. Proposed IRO-010-2, Requirements R1 and R3 handle the notifications from the Transmission Operator to the Reliability Coordinator. **Proposed TOP-001-3, Requirement R8**: **R8.** Each Transmission Operator shall inform its Reliability Coordinator, known impacted Balancing Authorities, and known impacted Transmission Operators of its actual or expected operations that result in, or could result in, an Emergency. **Proposed TOP-003-3, Requirement R1:** **R1**. Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. **Proposed TOP-003-3, Requirement R5:** **R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications … **Proposed IRO-010-2, Requirement R1:** **R1**. The Reliability Coordinator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. **Proposed IRO-010-2, Requirement R3:**

Standard TOP-001-1a — Reliability Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	R3. Each Reliability Coordinator, Balancing Authority, Planning Coordinator, Transmission Planner, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications …
R8. During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.	First sentence – real power: For the Balancing Authority part of the requirement, replaced by approved EOP-002-2.1, Requirement R6. The Transmission Operator does not balance real power so that part of the sentence can be deleted per the NERC Functional Model V5. First sentence – reactive power: Replaced by approved VAR-001-4, Requirement R3 for the Transmission Operator which covers reactive power requirements and the meaning of balancing reactive power for the Transmission Operator. The Balancing Authority must be told by the Transmission Operator to take actions regarding reactive power per the NERC Functional Model V5 and therefore the Balancing Authority can be deleted from this part of the requirement. Second sentence – The Balancing Authority must be told by the Transmission Operator to take actions regarding reactive power and thus the Balancing Authority is not necessary. Replaced by approved VAR-001-4, Requirements R1 for the Transmission Operator. Third sentence – Replaced by approved IRO-009-1, Requirements R1 and R2 for the Reliability Coordinator. Replaced by approved EOP-003-2, Requirement R1 for the Transmission Operator and Balancing Authority. **Approved EOP-002-3.1, Requirement R6:** **R6**. If the Balancing Authority cannot comply with the Control Performance and Disturbance Control Standards, then it shall immediately implement remedies to do so. **Approved VAR-001-4, Requirement R1:** **R1.** Each Transmission Operator shall specify a system voltage schedule (which is either a range or a target value with an associated tolerance band) as part of its plan to operate within System Operating Limits and Interconnection Reliability Operating Limits.

Standard TOP-001-1a — Reliability Responsibilities and Authorities	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Approved VAR-001-4, Requirement R3: **R3**. Each Transmission Operator shall operate or direct the Real-time operation of devices to regulate transmission voltage and reactive flow as necessary. **Approved IRO-009-1, Requirement R1:** **R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. **Approved IRO-009-1, Requirement R2:** **R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's Tv. **Approved EOP-003-2, Requirement R1:** **R1.** After taking all other remedial steps, a Transmission Operator or Balancing Authority operating with insufficient generation or transmission capacity shall shed customer load rather than risk an uncontrolled failure of components or cascading outages of the Interconnection.

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Balancing Authority and Transmission Operator shall maintain a set of current plans that are designed to evaluate options and set procedures for reliable operation through a reasonable future time period. In addition, each Balancing Authority and Transmission Operator shall be responsible for using available personnel and system equipment to implement these plans to ensure that interconnected system reliability will be maintained.	First sentence, retained for Balancing Authority and Transmission Operator and moved to proposed TOP-002-4, Requirements R2 and R4. Second sentence – Replaced by proposed TOP-001-3, Requirements R1 and R2 for Balancing Authority and Transmission Operator, which requires action to resolve issues. **Proposed TOP-002-4, Requirement R2:** **R2.** Each Transmission Operator shall have an Operating Plan(s) for next-day operations to address potential System Operating Limit (SOL) exceedances identified as a result of its Operational Planning Analysis as required in Requirement R1. **Proposed TOP-002-4, Requirement R4:** **R4.** Each Balancing Authority shall have an Operating Plan(s) for the next-day … **Proposed TOP-001-3, Requirement R1:** **R1.** Each Transmission Operator shall act to address the reliability of its Transmission Operator Area via direct actions or by issuing Operating Instructions. **Proposed TOP-001-3, Requirement R2:** **R2.** Each Balancing Authority shall act to address the reliability of its Balancing Authority Area via direct actions or by issuing Operating Instructions.
R2. Each Balancing Authority and Transmission Operator shall ensure its operating personnel participate in the system planning and design study processes, so that these studies contain the operating personnel perspective and system operating personnel are aware of the planning purpose.	The SDT is proposing to retire this requirement. While it may be good utility practice to do this, it is of marginal benefit to reliability and is more of a 'how' to conduct business as opposed to a definitive 'what' to do.
R3. Each Load Serving Entity and Generator Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal operations with its Host Balancing Authority and Transmission Service Provider. Each Balancing Authority and Transmission Service Provider shall coordinate its current-day, next-day, and seasonal operations with its Transmission Operator.	The Transmission Operator and Balancing Authority will receive the necessary data in proposed TOP-003-3, Requirement R5. The Transmission Service Provider provisions are covered in approved MOD-001-1a, Requirement R1; approved MOD-030-2, Requirement R3; and approved MOD-001-1a, Requirement R2. The coordination of plans is in proposed IRO-017-1, Requirement R2. **Proposed TOP-003-3, Requirement R5:**

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	R5. Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications … **Approved MOD-001-1a, Requirement R1:** **R1.** Each Transmission Operator shall select one of the methodologies1 listed below for calculating Available Transfer Capability (ATC) or Available Flowgate Capability (AFC) for each ATC Path per time period identified in R2 for those Facilities within its Transmission operating area. **Approved MOD-030-2, Requirement R3:** **R3.** The Transmission Operator shall make available to the Transmission Service Provider a Transmission model to determine Available Flowgate Capability (AFC) that … **Approved MOD-001-1a, Requirement R2:** **R2**. Each Transmission Service Provider shall calculate ATC or AFC values as listed below using the methodology or methodologies selected by its Transmission Operator(s). **Proposed IRO-017-1, Requirement R2:** **R2.** Each Transmission Operator and Balancing Authority shall perform the functions specified in its Reliability Coordinator's outage coordination process.
R4. Each Balancing Authority and Transmission Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal planning and operations with neighboring Balancing Authorities and Transmission Operators and with its Reliability Coordinator, so that normal Interconnection operation will proceed in an orderly and consistent manner.	Coordination of plans is covered in proposed IRO-017-1, Requirement R2 and proposed IRO-008-2, Requirement R2. **Proposed IRO-017-1, Requirement R2:** **R2.** Each Transmission Operator and Balancing Authority shall perform the functions specified in its Reliability Coordinator's outage coordination process. **Proposed iRO-008-2, Requirement R2:** **R2**. Each Reliability Coordinator shall have a coordinated Operating Plan(s) for next-day operations to address potential System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) exceedances identified as a result of its Operational Planning Analysis as performed in Requirement R1 while considering the Operating Plans for the next-day provided by its Transmission Operators and Balancing Authorities.

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R5. Each Balancing Authority and Transmission Operator shall plan to meet scheduled system configuration, generation dispatch, interchange scheduling and demand patterns.	This requirement has been moved to proposed TOP-002-4, Requirements R2 and R4. **Proposed TOP-002-4, Requirement R2:** **R2.** Each Transmission Operator shall have an Operating Plan(s) for next-day operations to address potential System Operating Limit (SOL) exceedances identified as a result of its Operational Planning Analysis as required in Requirement R1. **Proposed TOP-002-4, Requirement R4:** **R4.** Each Balancing Authority shall have an Operating Plan(s) for the next-day that addresses: **4.1** Expected generation resource commitment and dispatch. **4.2** Interchange scheduling **4.3** Demand patterns **4.4** Capacity and energy reserve requirements, including deliverability capability
R6. Each Balancing Authority and Transmission Operator shall plan to meet unscheduled changes in system configuration and generation dispatch (at a minimum N-1 Contingency planning) in accordance with NERC, Regional Reliability Organization, subregional, and local reliability requirements.	The part of the requirement dealing with the Balancing Authority and Transmission Operator is replaced by proposed TOP-002-4, Requirements R2 and R4. The n-1 Contingency planning is 'built in' to the Operational Planning Analysis since SOLs are derived according to the approved FAC standards which include Contingency planning. In addition, the definition of Operational Planning Analysis has been revised to better show the intent of the Contingency aspects of the analysis. The SDT does not believe that there is a need to replace the last part of the sentence 'in accordance with…' with the advent of the ERO and enforceable reliability standards. **Proposed TOP-002-4, Requirement R2:** **R2.** Each Transmission Operator shall have an Operating Plan(s) for next-day operations to address potential System Operating Limit (SOL) exceedances identified as a result of its Operational Planning Analysis as required in Requirement R1. **Proposed TOP-002-4, Requirement R4:**

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	R4. Each Balancing Authority shall have an Operating Plan(s) for the next-day that addresses: 4.1 Expected generation resource commitment and dispatch. 4.2 Interchange scheduling 4.3 Demand patterns 4.4 Capacity and energy reserve requirements, including deliverability capability **Proposed definition: Operational Planning Analysis** An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to, load forecasts; generation output levels; Interchange; known Protection System and Special Protection System status or degradation; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.)
R7. Each Balancing Authority shall plan to meet capacity and energy reserve requirements, including the deliverability/capability for any single Contingency.	This requirement is replaced by proposed TOP-002-4, Requirement R4. **Proposed TOP-002-4, Requirement R4:** **R4.** Each Balancing Authority shall have an Operating Plan(s) for the next-day that addresses: **4.1** Expected generation resource commitment and dispatch. **4.2** Interchange scheduling **4.3** Demand patterns **4.4** Capacity and energy reserve requirements, including deliverability capability
R8. Each Balancing Authority shall plan to meet voltage and/or reactive limits, including the deliverability/capability for any single contingency.	Voltage and reactive power balance are the responsibility of the Transmission Operator and are replaced by approved VAR-001-4, Requirement R1. Deliverability by the Balancing Authority is covered by proposed TOP-002-4, Requirement R4. **Approved VAR-001-4, Requirement R1:** **R1.** Each Transmission Operator shall specify a system voltage schedule (which is either a range or a

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	target value with an associated tolerance band) as part of its plan to operate within System Operating Limits and Interconnection Reliability Operating Limits. **Proposed TOP-002-4, Requirement R4:** R4. Each Balancing Authority shall have an Operating Plan(s) for the next-day that addresses: **4.1** Expected generation resource commitment and dispatch. **4.2** Interchange scheduling **4.3** Demand patterns **4.4** Capacity and energy reserve requirements, including deliverability capability
R9. Each Balancing Authority shall plan to meet Interchange Schedules and ramps.	This requirement is replaced by approved INT-006-4, Requirement R5, and proposed TOP-002-4, Requirement R4. **Approved INT-006-4, Requirement R5:** **R5**. For each Arranged Interchange that is transitioned to Confirmed Interchange, the Sink Balancing Authority shall notify the following entities of the on-time Confirmed Interchange such that the notification is delivered in time to be incorporated into scheduling systems prior to ramp start as specified in Attachment 1, Column D: **Proposed TOP-002-4, Requirement R4:** **R4.** Each Balancing Authority shall have an Operating Plan(s) for the next-day that addresses: **4.1** Expected generation resource commitment and dispatch. **4.2** Interchange scheduling **4.3** Demand patterns **4.4** Capacity and energy reserve requirements, including deliverability capability
R10. Each Balancing Authority and Transmission Operator shall plan to meet all System Operating Limits (SOLs) and Interconnection Reliability Operating Limits (IROLs).	Balancing Authority - The Balancing Authority is only responsible to respond to Operating Instructions as per the definition of Balancing Authority in the NERC Glossary and, thus, consistent with the Commission-approved interpretation of Requirement R10, Balancing

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Authorities have been removed from the applicability of this requirement. SOLs and IROLs are limits which the Balancing Authority may not have (and is not required to have) the ability to monitor or control. The Transmission Operator, who is required to monitor SOLs, instructs the Balancing Authority as to what to do in these situations. As stated in the NERC Functional Model V5, "the Balancing Authority's mission is to maintain the balance between loads and resources in real time within its Balancing Authority Area by keeping its actual interchange equal to its scheduled interchange and meeting its frequency bias obligation". The Balancing Authority does not possess the Bulk Power System information necessary to manage Transmission flows. Therefore, the Balancing Authority can only plan to meet SOLs and IROLs by responding to directions (as shown in proposed TOP-001-3, Requirement R3) from the Transmission Operator, including scheduling and operating resources within the limits prescribed by the Transmission Operator. The Balancing Authority must coordinate outage information and exchange data required to allow the Transmission Operator to deal with SOLs. Those items are in proposed IRO-017-1, Requirement R2 and proposed TOP-003-3, Requirement R5. That information is considered by the Transmission Operator when formulating its Operating Plans and since IROLs are a sub-set of SOLs, this is covered in proposed TOP-002-4, requirement R2. **Proposed TOP-001-3, Requirement R3:** **R3.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall comply with each Operating Instruction issued by its Transmission Operator(s), unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements. **Proposed IRO-017-1, Requirement R2:** **R2.** Each Transmission Operator and Balancing Authority shall perform the functions specified in its Reliability Coordinator's outage coordination process. **Proposed TOP-003-3, Requirement R5:** **R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications **Proposed TOP-002-4, Requirement R2:** **R2.** Each Transmission Operator shall have an Operating Plan(s) for next-day operations to address potential System Operating Limit (SOL) exceedances identified as a result of its Operational Planning Analysis as required in Requirement R1.
R11. The Transmission Operator shall perform seasonal, next-day, and current-day Bulk Electric System studies to determine SOLs. Neighboring Transmission Operators shall utilize identical SOLs for common facilities. The Transmission Operator shall update these Bulk Electric System studies as necessary to reflect current system conditions; and shall make the results of Bulk Electric System studies available to the Transmission Operators, Balancing Authorities (subject confidentiality requirements), and to its Reliability Coordinator.	First sentence replaced by proposed TOP-002-4, Requirement R1, proposed TOP-001-3, Requirement R13. Specific requirements for seasonal studies are not necessary as proposed IRO-017-1 allows for the Reliability Coordinator to determine the timeframe of the studies that it needs. Second sentence – SOLs are set by the Transmission Operator in approved FAC-014-2, Requirement R2 according to the methodology distributed by the Reliability Coordinator in approved FAC-011-2, Requirement R4, Part 4.3. This should assure that SOLs are consistent for common facilities. Third sentence – Replaced by proposed TOP-001-3, Requirement R13 and proposed TOP-001-3, Requirement R8. **Proposed TOP-002-4, Requirement R1:** **R1**. Each Transmission Operator shall have an Operational Planning Analysis that will allow it to assess whether its planned operations for the next day within its Transmission Operator Area will exceed any of its System Operating Limits (SOLs). **Proposed TOP-001-3, Requirement R13:** **R13**. Each Transmission Operator shall ensure that a Real-time Assessment is performed at least once every 30 minutes. **Approved FAC-014-2, Requirement R2:**

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	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. **Approved FAC-011-2, Requirement R4:** **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: 4.3 Each Transmission Operator that operates in the Reliability Coordinator Area. **Proposed TOP-001-3, Requirement R8:** **R8**. Each Transmission Operator shall inform its Reliability Coordinator, known impacted Balancing Authorities, and known impacted Transmission Operators of its actual or expected operations that result in, or could result in, an Emergency.
R12. The Transmission Service Provider shall include known SOLs or IROLs within its area and neighboring areas in the determination of transfer capabilities, in accordance with filed tariffs and/or regional Total Transfer Capability and Available Transfer Capability calculation processes.	Replaced by approved MOD-028-2, Requirement R6.1; approved MOD-029-1a, Requirement R3; and approved MOD-030-2, Requirement R2.4. Because IROLs by definition are a subset of SOLs, IROLs are included. **Approved MOD-028-2, Requirement R6.1:** **6.1** Determine the incremental Transfer Capability for each ATC Path by increasing generation and/or decreasing load within the source Balancing Authority area and decreasing generation and/or increasing load within the sink Balancing Authority area until either: • A System Operating Limit is reached on the Transmission Service Provider's system, or • A SOL is reached on any other adjacent system in the Transmission model that is not on the study path and the distribution factor is 5% or greater. **Approved MOD-029-1a, Requirement R3:** **R3.** Each Transmission Operator shall establish the TTC at the lesser of the value calculated in R2 or any System Operating Limit (SOL) for that ATC Path. **Approved MOD-030-2, Requirement R2.4:**

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	2.4 Establish the TFC of each of the defined Flowgates as equal to: - For thermal limits, the System Operating Limit (SOL) of the Flowgate. - For voltage or stability limits, the flow that will respect the SOL of the Flowgate.
R13. At the request of the Balancing Authority or Transmission Operator, a Generator Operator shall perform generating real and reactive capability verification that shall include, among other variables, weather, ambient air and water conditions, and fuel quality and quantity, and provide the results to the Balancing Authority or Transmission Operator operating personnel as requested.	This requirement is replaced by proposed TOP-001-3, Requirement R2 where a Balancing Authority can issue Operating instructions to the Generator Operator which could include verification. The SDT believes that this requirement does not apply to the Transmission Operator since it is dealing exclusively with generation. The data coming back from the verification effort would be included in the Balancing Authority data specification as shown in proposed TOP-003-3, Requirements R2 and R5. **Proposed TOP-001-3, Requirement R2:** **R2.** Each Balancing Authority shall act, or direct others to act by issuing Operating Instructions, to ensure the reliability of its Balancing Authority Area. **Proposed TOP-003-3, Requirement R2:** **R2.** Each Balancing Authority shall maintain a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. **Proposed TOP-003-3, Requirement R5:** **R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications.
R14. Generator Operators shall, without any intentional time delay, notify their Balancing Authority and Transmission Operator of changes in capabilities and characteristics including but not limited to: **14.1** Changes in real and reactive output capabilities. (Retired August 1, 2007)	This requirement is replaced by proposed TOP-003-3, Requirement R5. **Proposed TOP-003-3, Requirement R5:** **R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications …

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
14.2 Changes in real output capabilities(Effective August 1, 2007) **14.3** Automatic Voltage Regulator status and mode setting. (Retired August 1, 2007)	
R15. Generation Operators shall, at the request of the Balancing Authority or Transmission Operator, provide a forecast of expected real power output to assist in operations planning (e.g., a seven-day forecast of real output).	This requirement is replaced by proposed TOP-003-3, Requirement R5. **Proposed TOP-003-3, Requirement R5:** **R5**. Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications.
R16. Subject to standards of conduct and confidentiality agreements, Transmission Operators shall, without any intentional time delay, notify their Reliability Coordinator and Balancing Authority of changes in capabilities and characteristics including but not limited to: **16.1** - Changes in transmission facility status. **16.2** - Changes in transmission facility rating	This requirement replaced by proposed IRO-010-2, Requirement R3. **Proposed IRO-010-2, Requirement R3:** **R3**. Each Reliability Coordinator, Balancing Authority, Planning Coordinator, Transmission Planner, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications
R17. Balancing Authorities and Transmission Operators shall, without any intentional time delay, communicate the information described in the requirements R1 to R16 above to their Reliability Coordinator.	This requirement replaced by proposed IRO-010-2, Requirement R3. **Proposed IRO-010-2, Requirement R3:** **R3.** Each Reliability Coordinator, Balancing Authority, Planning Coordinator, Transmission Planner, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications using:
R18. Neighboring Balancing Authorities, Transmission Operators, Generator Operators, Transmission Service Providers and Load Serving Entities shall use uniform line identifiers when referring to transmission facilities of an interconnected network.	This requirement is proposed for retirement as it adds no reliability benefit. Entities have existing processes that handle this issue. There has never been a documented case of the lack of uniform line identifiers contributing to a system reliability issue. This is an administrative item as seen in the measure which simply requires a list of line identifiers. The true reliability issue is not the name of a line but what is happening to it, pointing out the

Standard TOP-002-2.1b — Normal Operations Planning	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	difficulty in assigning compliance responsibility for such a requirement, as well as the near impossibility of coming up with truly unique identifiers on a nation-wide basis. The bottom line is that this situation is handled by the operators as part of their normal responsibilities and no one is aware of a switching error caused by confusion over line identifiers.
R19. Each Balancing Authority and Transmission Operator shall maintain accurate computer models utilized for analyzing and planning system operations.	Accuracy is a relative term that would be difficult to objectively measure and assess compliance with. Proposed TOP-003-3, Requirement R1 stipulates that entities must supply the data needed for reliability. The expectation is that the Transmission Operator would specify the data it requires to perform its functions which would include all of the data it needs to create the model for its analyses and studies. The requirement language allows the entity to specify accuracy of the data provided as part of its data specification. This will, in turn, lead to the creation of an accurate model based on accurate data received. In addition, proposed TOP-003-3, Requirement R5, Part 5.2 allows for the resolution of any data causing conflicts that could affect the models. **Proposed TOP-003-3, Requirement R1:** **R1.** Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include, but not be limited to: **Proposed TOP-003-3, Requirement R5, Part 5.2:** **5.2** A mutually agreeable process for resolving data conflicts

Standard TOP-003-1 — Planned Outage Coordination	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Generator Operators and Transmission Operators shall provide planned outage information. **1.1** Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements. **1.2** Each Transmission Operator shall provide outage information daily to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. The Reliability Coordinator shall establish the outage reporting requirements. **1.3** Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.	Parts 1.1, 1.2, and 1.3 are addressed as follows: **1.1** Generator Operators will provide planned outage information to Transmission Operators through proposed TOP-003-3, Requirement R5. Reporting requirements are set in proposed TOP-003-3, Requirement R1. **1.2** Transmission Operators will provide planned outage information to Reliability Coordinators through proposed IRO-010-2, Requirement R3. Reporting requirements are set in proposed IRO-010-2, Requirement R1. **1.3** Reporting requirements are set in proposed TOP-003-3, Requirement R1 and proposed IRO-010-2, Requirement R1. **Proposed TOP-003-3, Requirement R5:** **R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications … **Proposed TOP-003-3, Requirement R1:** **R1.** Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification … **Proposed IRO-010-2, Requirement R3:** **R3.** Each Reliability Coordinator, Balancing Authority, Planning Coordinator, Transmission Planner, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications. **Proposed IRO-010-2, Requirement R1:** **R1.** The Reliability Coordinator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.

Standard TOP-003-1 — Planned Outage Coordination	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.	Generator Operators will provide planned outage information to Transmission Operators and Balancing Authorities through proposed TOP-003-3, Requirement R5. Reporting requirements are set in proposed TOP-003-3, Requirement R1. Transmission Operators and Balancing Authorities coordinate outages through proposed IRO-017-1, Requirement R2. **Proposed TOP-003-3, Requirement R5:** **R5**. Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications … **Proposed TOP-003-3, Requirement R1:** **R1.** Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification … **Proposed IRO-017-1, Requirement R2:** **R2.** Each Transmission Operator and Balancing Authority shall perform the functions specified in its Reliability Coordinator's outage coordination process.
R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.	This requirement is replaced by proposed TOP-001-3, Requirement R9. The data specification concept in proposed TOP-003-3 requires entities to provide data as requested. If there are outages of the equipment needed for providing that data, the entity experiencing the outage must notify the entity it is sending data to so that proper arrangements can be made for replacing the data or coming up with a plan to live without it. It is expected that the data specifications would incorporate such concepts. **Proposed TOP-001-3, Requirement R9:** **R9**. Each Balancing Authority and Transmission Operator shall notify its Reliability Coordinator and impacted interconnected entities of sustained outages of telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels between the affected entities.

Standard TOP-003-1 — Planned Outage Coordination	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R4. Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.	This requirement is replaced by proposed IRO-008-2, Requirement R2 and proposed IRO-017-1, Requirement R1, Part 1.4. **Proposed IRO-017-1, Requirement R1, Part 1.4**: **1.4** Define the process to coordinate the resolution of identified outage conflicts with its Transmission Operators and Balancing Authorities, and other Reliability Coordinators **Proposed IRO-008-2, Requirement R2:** **R2.** Each Reliability Coordinator shall have a coordinated Operating Plan(s) for next-day operations to address potential System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) exceedances identified as a result of its Operational Planning Analysis as performed in Requirement R1 while considering the Operating Plans for the next-day provided by its Transmission Operators and Balancing Authorities.

Standard TOP-004-2 — Transmission Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Transmission Operator shall operate within the Interconnection Reliability Operating Limits (IROLs) and System Operating Limits (SOLs).	This requirement has been replaced by proposed TOP-001-3, Requirements R12 and R14. **Proposed TOP-001-3, Requirement R12:** **R12.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V. **Proposed TOP-001-3, Requirement R14:** **R14**. Each Transmission Operator shall initiate its Operating Plan to mitigate an SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment.
R2. Each Transmission Operator shall operate so that instability, uncontrolled separation, or cascading outages will not occur as a result of the most severe single contingency.	The SDT has revised the definitions of Operational Planning Analysis and Real-time Assessment to address all Contingencies, not just the single most severe Contingency and operations follow suit as shown in proposed TOP-001-3, Requirement R14 and proposed TOP-002-4, Requirement R2.

Standard TOP-004-2 — Transmission Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed definition: **Real-time Assessment** - An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load, generation output levels, known Protection System and Special Protection System status or degradation, Transmission outages, generator outages, Interchange, Facility Ratings, and identified phase angle and equipment limitations. (Real-time Assessment may be provided through internal systems or through third-party services.) **Proposed definition:** **Operational Planning Analysis -** An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to, load forecasts; generation output levels; Interchange; known Protection System and Special Protection System status or degradation; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.) **Proposed TOP-001-3, Requirement R14:** **R14.** Each Transmission Operator shall initiate its Operating Plan to mitigate an SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment. **Proposed TOP-002-4, Requirement R2:** **R2**. Each Transmission Operator shall have an Operating Plan(s) for next-day operations to address potential System Operating Limit (SOL) exceedances identified as a result of its Operational Planning Analysis as required in Requirement R1.
R3. Each Transmission Operator shall operate to protect against instability, uncontrolled separation, or cascading outages resulting from multiple outages, as specified by its Reliability Coordinator.	This requirement is replaced by proposed TOP-001-3, Requirements R12 and R14. These requirements are not limited by single or multiple Contingencies. Approved FAC-011-2 and FAC-014-2 work collectively to establish how multiple Contingencies are considered in IROLs and SOLs. Approved FAC-014-2, Requirement R6 requires the Planning Coordinator to identify the subset of multiple Contingencies and to provide this list to the Reliability

Standard TOP-004-2 — Transmission Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Coordinators. Approved FAC-011-2, Requirement R3.3 requires the Reliability Coordinator to include in its SOL methodology a process for determining which of the Stability limits associated with multiple Contingencies are used to establish SOLs. Approved FAC-014-2, Requirement R1 requires the Reliability Coordinator to determine which subset of SOLs qualify as IROLS. Approved FAC-014-2, Requirement R1 also requires the Reliability Coordinator to ensure SOLs, including IROLs, are established for its Reliability Coordinator Area while approved FAC-014-2, Requirement R2 also requires the Transmission Operator to establish SOLs for its area. Thus, IROLs and SOLs that consider multiple outages will be developed appropriately and the Transmission Operator will operate to them. **Proposed TOP-001-3, Requirement R12:** **R12.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V. **Proposed TOP-001-3, Requirement R14:** **R14.** Each Transmission Operator shall initiate its Operating Plan to mitigate an SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment. **Approved FAC-011-2, Requirement R1:** **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: **R1.1**. Be applicable for developing SOLs used in the planning horizon **R1.2.** State that SOLs shall not exceed associated Facility Ratings. **R1.3.** Include a description of how to identify the subset of SOLs that qualify as IROLs. **Approved FAC-011-2, Requirement R3:** **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: **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

Standard TOP-004-2 — Transmission Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	FAC-014 Requirement 6) are applicable for use in the operating horizon given the actual or expected system conditions. **R3.3.1**. This process shall address the need to modify these limits, to modify the list of limits, and to modify the list of associated multiple contingencies. **Approved FAC-014-2, Requirement R1:** **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. **Approved FAC-014-2, Requirement R2:** **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. **Approved FAC-014-2, Requirement R6:** **R6.** The Planning Authority shall identify the subset of multiple contingencies (if any), from Reliability Standard TPL-003 which result in stability limits. **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. **R6.2.** If the Planning Authority does not identify any stability related multiple contingencies, the Planning Authority shall so notify the Reliability Coordinator.
R4. If a Transmission Operator enters an unknown operating state (i.e., any state for which valid operating limits have not been determined), it will be considered to be in an emergency and shall restore operations to respect proven reliable power system limits within 30 minutes.	The SDT believes that given the revised definitions for Operational Planning Analysis and Real-time Assessment, as well as the new requirement for TOPs to update their OPA results through the performance of a Real-time Assessment every 30 minutes, that entities will always be operating to valid operating limits. Therefore, this requirement is replaced by proposed TOP-001-3, Requirements R12, R13, and R14 along with the revised definitions of Operational Planning Analysis and Real-time Assessment. This allows the operator sufficient flexibility within a structured environment to take the necessary actions for the reliability of the Bulk Power System.

Standard TOP-004-2 — Transmission Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed TOP-001-3, Requirement R12: **R12**. Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V. P**roposed TOP-001-3, Requirement R13:** **R13**. Each Transmission Operator shall ensure that a Real-time Assessment is performed at least once every 30 minutes. **Proposed TOP-001-3, Requirement R14:** **R14.** Each Transmission Operator shall initiate its Operating Plan to mitigate an SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment. **Proposed definition:** **Operational Planning Analysis -** An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to, load forecasts; generation output levels; Interchange; known Protection System and Special Protection System status or degradation; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.) **Proposed definition:** **Real-time Assessment** - An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load, generation output levels, known Protection System and Special Protection System status or degradation, Transmission outages, generator outages, Interchange, Facility Ratings, and identified phase angle and equipment limitations. (Real-time Assessment may be provided through internal systems or through third-party services.)
R5. Each Transmission Operator shall make every effort to remain connected to the Interconnection. If the Transmission Operator determines that by remaining interconnected, it is in imminent danger of violating an IROL or SOL, the Transmission	Normally, the Transmission Operator does not have the right to unilaterally separate – that can only be done through the authorization of the Reliability Coordinator, unless failure to act immediately would violate safety, equipment, or regulatory or statutory requirements, thus this requirement is proposed for retirement by the SDT. In the Functional Model v5, the

Standard TOP-004-2 — Transmission Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
Operator may take such actions, as it deems necessary, to protect its area.	Transmission Operator responsibilities and duties are clearly spelled out. Item 14 states that a Transmission Operator sheds load under the auspices of the Reliability Coordinator. Functional model v5: 14. Coordinates load shedding with, or as directed by, the Reliability Coordinator
R6. Transmission Operators, individually and jointly with other Transmission Operators, shall develop, maintain, and implement formal policies and procedures to provide for transmission reliability. These policies and procedures shall address the execution and coordination of activities that impact inter- and intra-Regional reliability, including: **6.1** Monitoring and controlling voltage levels and real and reactive power flows. **6.2** Switching transmission elements. **6.3** Planned outages of transmission elements. **6.4** Responding to IROL and SOL violations.	The first sentence has been superseded by the NERC Reliability Standards taken as a whole and is proposed to be retired. The second sentence was replaced as follows: **R6.1** is duplicative of approved VAR-001-4, Requirement R1 for reactive power. Real power flows are covered in proposed TOP-001-3, Requirements R10, R12 and R14. **R6.2** has been replaced by proposed TOP-001-3, Requirement R8. **R6.3** has been replaced by proposed IRO-017-1, Requirement R2. **R6.4** has been replaced by proposed TOP-001-3, Requirements R12 and R14. **Approved VAR-001-4, Requirement R1:** **R1.** Each Transmission Operator shall specify a system voltage schedule (which is either a range or a target value with an associated tolerance band) as part of its plan to operate within System Operating Limits and Interconnection Reliability Operating Limits. **Proposed TOP-001-3, Requirement R8:** **R8**. Each Transmission Operator shall inform its Reliability Coordinator, known impacted Balancing Authorities, and known impacted Transmission Operators of its actual or expected operations that result in, or could result in, an Emergency. **Proposed TOP-001-3, Requirement R10:** **R10.** Each Transmission Operator shall monitor the following as necessary for determining System Operating Limit (SOL) exceedances within its Transmission Operator Area: R1.1. Within its Transmission Operator Area:

Standard TOP-004-2 — Transmission Operations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	R1.1.1. Facilities, **R1.1.2.** The status of Special Protection Systems, and **R1.1.3.** Non-BES facilities identified as necessary by the Transmission Operator and R1.2. Within neighboring Transmission Operator Areas identified as necessary by the Transmission Operator: **R1.2.1.** Facilities, **R1.2.2.** Status of Special Protection Systems, and **R1.2.3.** Non-BES facilities. **Proposed TOP-001-3, Requirement R12:** **R12.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V. **Proposed TOP-001-3, Requirement R14:** **R14.** Each Transmission Operator shall initiate its Operating Plan to mitigate an SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment. **Proposed IRO-017-1, Requirement R2:** **R2.** Each Transmission Operator and Balancing Authority shall perform the functions specified in its Reliability Coordinator's outage coordination process.

Standard TOP-005-2a — Operational Reliability Information	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for "Electric System Reliability Data."	Recognizing security concerns, the SDT has added security protocols to proposed IRO-010-2, Requirement R3, Part 3.3 and to proposed TOP-003-3, Requirement R5, Part 5.3 to address overall security concerns. **Proposed IRO-010-2, Requirement R3, Part 3.3:** **3.3** A mutually agreeable security protocol **Proposed TOP-003-3, Requirement R5, Part 5.3:** **5.3** A mutually agreeable security protocol.
R2. Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005-2a "Electric System Reliability Data," unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.	This requirement replaced by proposed TOP-003-3, Requirement R1, R2, and R5. **Proposed TOP-003-3, Requirement R1:** **R1.** Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. **Proposed TOP-003-3, Requirement R2:** **R2**. Each Balancing Authority shall maintain a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. **Proposed TOP-003-3, Requirement R5:** **R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications.
R3. Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.	Deleted as redundant to NAESB standards – All operating data that a Purchasing-Selling Entity has that a Transmission Operator or Balancing Authority needs is part of eTag and is acquired through that system.

Standard TOP-006-3 – Monitoring System Conditions	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use. **1.1** - Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use. **1.2** - Each Transmission Operator shall inform the Reliability Coordinator and other affected Transmission Operators of all transmission resources available for use. **1.3 -** Each Balancing Authority shall inform its Reliability Coordinator of all generation resources available for use.	The main body of the requirement is replaced by proposed TOP-001-3, Requirements R10 and R11. **1.1** This Part is replaced by proposed TOP-003-3, Requirement R5. **1.2** This Part is replaced by proposed IRO-101-2, Requirement R3. **1.3** This Part is replaced by proposed IRO-010-2, Requirement R3. **Proposed TOP-001-3, Requirement R10:** **R10.** Each Transmission Operator shall monitor the following as necessary for determining System Operating Limit (SOL) exceedances within its Transmission Operator Area: R1.1. Within its Transmission Operator Area: **R1.1.1.** Facilities, **R1.1.2.** The status of Special Protection Systems, and **R1.1.3.** Non-BES facilities identified as necessary by the Transmission Operator and R1.2. Within neighboring Transmission Operator Areas identified as necessary by the Transmission Operator: **R1.2.1.** Facilities, **R1.2.2.** Status of Special Protection Systems, and **R1.2.3.** Non-BES facilities. **Proposed TOP-001-3, Requirement R11:** **R11.** Each Balancing Authority shall monitor its Balancing Authority Area, including the status of Special Protection Systems that impact generation or Load, in order for it to be able to perform its reliability functions. **Proposed TOP-003-3, Requirement R5:** **R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data

Standard TOP-006-3 – Monitoring System Conditions	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications. **Proposed IRO-010-2, Requirement R3:** **R3.** Each Reliability Coordinator, Balancing Authority, Planning Coordinator, Transmission Planner, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications.
R2. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.	This requirement is replaced by proposed IRO-002-4, Requirement R3, proposed TOP-001-3, Requirement R10, and proposed TOP-001-3, R11. The requirements mandate that any Facility needed for an entity to perform its reliability-based functions must be monitored. This would include load-tap changers, rotating and static reactive resources, etc. **Proposed IRO-002-4, Requirement R3:** **R3.** Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area. **Proposed TOP-001-3, Requirement R10:** **R10.** Each Transmission Operator shall monitor the following as necessary for determining System Operating Limit (SOL) exceedances within its Transmission Operator Area: R1.1. Within its Transmission Operator Area: **R1.1.1.** Facilities, **R1.1.2.** The status of Special Protection Systems, and **R1.1.3.** Non-BES facilities identified as necessary by the Transmission Operator and R1.2. Within neighboring Transmission Operator Areas identified as necessary by the Transmission Operator:

Standard TOP-006-3 – Monitoring System Conditions	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	R1.2.1. Facilities, **R1.2.2.** Status of Special Protection Systems, and **R1.2.3.** Non-BES facilities. **Proposed TOP-001-3, Requirement R11:** **R11.** Each Balancing Authority shall monitor its Balancing Authority Area, including the status of Special Protection Systems that impact generation or Load, in order for it to be able to perform its reliability functions.
R3. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide its operating personnel with appropriate technical information concerning protective relays within the Reliability Coordinator Area, the Transmission Operator Area, and the Balancing Authority Area, respectively.	This requirement replaced by proposed IRO-010-2, Requirement R1, Part 1.2; proposed TOP-003-3, Requirement R1, Part 1.2; and proposed TOP-003-3, Requirement R2, Part 2.2.; and the proposed changes to the definitions of Operational Planning Analysis and Real-time Assessment. **Proposed definition: Operational Planning Analysis -** An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to, load forecasts; generation output levels; Interchange; known Protection System and Special Protection System status or degradation; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.) **Proposed definition: Real-time Assessment** - An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load, generation output levels, known Protection System and Special Protection System status or degradation, Transmission outages, generator outages, Interchange, Facility Ratings, and identified phase angle and equipment limitations. (Real-time Assessment may be provided through internal systems or through third-party services.)

Standard TOP-006-3 – Monitoring System Conditions	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed IRO-010-2, Requirement R1, Part 1.2: **R1.** The Reliability Coordinator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include but not be limited to: **1.2** Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability. **Proposed TOP-003-3, Requirement R1, Part 1.2:** **R 1.** Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include, but not be limited to: **1.2** Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability. **Proposed TOP-003-3, Requirement R2, Part 2.2:** **R2**. Each Balancing Authority shall maintain a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. The data specification shall include, but not be limited to: **2.2** Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability.
R4. Each Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.	This requirement replaced by proposed TOP-003-3, Requirement R1 and R2 with regard to load patterns. Weather forecasts are a necessary element for load forecasts which are required for Operational Planning Analysis. Therefore, this requirement can be retired. **Proposed TOP-003-3, Requirement R1:** **R1.** Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. **Proposed TOP-003-3, Requirement R2:** **R2.** Each Balancing Authority shall maintain a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.

Standard TOP-006-3 – Monitoring System Conditions	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed definition: **Operational Planning Analysis -** An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to, load forecasts; generation output levels; Interchange; known Protection System and Special Protection System status or degradation; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.)
R5. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions and to indicate, if appropriate, the need for corrective action.	This requirement replaced by proposed TOP-001-3, Requirements R10 and R11, and proposed IRO-002-4, Requirement R3. **Proposed TOP-001-3, Requirement R10:** **R10.** Each Transmission Operator shall monitor the following as necessary for determining System Operating Limit (SOL) exceedances within its Transmission Operator Area: R1.1. Within its Transmission Operator Area: **R1.1.1.** Facilities, **R1.1.2.** The status of Special Protection Systems, and **R1.1.3.** Non-BES facilities identified as necessary by the Transmission Operator and R1.2. Within neighboring Transmission Operator Areas identified as necessary by the Transmission Operator: **R1.2.1.** Facilities, **R1.2.2.** Status of Special Protection Systems, and **R1.2.3.** Non-BES facilities. **Proposed TOP-001-3, Requirement R11:** **R11.** Each Balancing Authority shall monitor its Balancing Authority Area, including the status of Special Protection Systems that impact generation or Load, in order for it to be able to perform its reliability functions.

Standard TOP-006-3 – Monitoring System Conditions	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed IRO-002-4, Requirement R3: **R3.** Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area.
R6. Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.	The requirement is replaced by proposed TOP-003-3, Requirements R1 and R2 which state that data specifications can include, but are not limited to the 4 criteria listed. This allows for an entity to create specifications that would include items such as range of metering, accuracy, etc. **Proposed TOP-003-3, Requirement R1:** **R1**. Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include, but not be limited to: **Proposed TOP-003-3, Requirement R2:** **R2**. Each Balancing Authority shall maintain a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. The data specification shall include, but not be limited to:
R7. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.	This requirement is replaced by proposed IRO-002-4, Requirement R3, and proposed TOP-001-3, Requirements R10 and R11. **Proposed IRO-002-4, Requirement R3**: **R3.** Each Reliability Coordinator shall monitor Facilities, the status of Special Protection Systems, and non-BES facilities identified as necessary by the Reliability Coordinator, within its Reliability Coordinator Area and neighboring Reliability Coordinator Areas to identify any System Operating Limit exceedances and to determine any Interconnection Reliability Operating Limit exceedances within its Reliability Coordinator Area.

Standard TOP-006-3 – Monitoring System Conditions	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed TOP-001-3, Requirement R10: **R10.** Each Transmission Operator shall monitor the following as necessary for determining System Operating Limit (SOL) exceedances within its Transmission Operator Area: R1.1. Within its Transmission Operator Area: **R1.1.1.** Facilities, **R1.1.2.** The status of Special Protection Systems, and **R1.1.3.** Non-BES facilities identified as necessary by the Transmission Operator and R1.2. Within neighboring Transmission Operator Areas identified as necessary by the Transmission Operator: **R1.2.1.** Facilities, **R1.2.2.** Status of Special Protection Systems, and **R1.2.3.** Non-BES facilities. **Proposed TOP-001-3, Requirement R11:** **R11.** Each Balancing Authority shall monitor its Balancing Authority Area, including the status of Special Protection Systems that impact generation or Load, in order for it to be able to perform its reliability functions.

Standard TOP-007-0 - Reporting System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) Violations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. A Transmission Operator shall inform its Reliability Coordinator when an IROL or SOL has been exceeded and the actions being taken to return the system to within limits.	This requirement is replaced by proposed TOP-001-3, Requirement R15. The Reliability Coordinator has the primary responsibility for IROLs and will be in communication with Transmission Operators to mitigate the situation. This is shown in proposed IRO-008-2, Requirements R5 and R6. **Proposed TOP-001-3, Requirement R15:** **R15.** Each Transmission Operator shall inform its Reliability Coordinator of actions taken to return the system to within limits when a SOL has been exceeded.

Standard TOP-007-0 - Reporting System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) Violations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	Proposed IRO-008-2, Requirement R5: **R5.** Each Reliability Coordinator shall notify impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the results of a Real-time Assessment indicate an actual or expected condition that results in, or could result in, a System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance within its Wide Area. **Proposed IRO-008-2, Requirement R6:** **R6.** Each Reliability Coordinator shall notify impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance identified in Requirement R5 has been prevented or mitigated.
R2. Following a Contingency or other event that results in an IROL violation, the Transmission Operator shall return its transmission system to within IROL as soon as possible, but not longer than 30 minutes.	This requirement is replaced by proposed TOP-001-3, Requirement R12 and approved IRO-009-1, Requirement R4. **Approved IRO-009-1, Requirement R4:** **R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's Tv. **Proposed TOP-001-3, Requirement R12:** **R12.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V.
R3. A Transmission Operator shall take all appropriate actions up to and including shedding firm load, or directing the shedding of firm load, in order to comply with Requirement R2.	This requirement replaced by approved EOP-003-2, Requirement R1 and approved IRO-009-1, Requirement R4. **Approved IRO-=009-1, Requirement R4:** **R4**. When actual system conditions show that there is an instance of exceeding an IROL in

Standard TOP-007-0 - Reporting System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) Violations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
	its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's Tv. **Approved EOP-003-2, Requirement R1:** **R1**. After taking all other remedial steps, a Transmission Operator or Balancing Authority operating with insufficient generation or transmission capacity shall shed customer load rather than risk an uncontrolled failure of components or cascading outages of the Interconnection.
R4. The Reliability Coordinator shall evaluate actions taken to address an IROL or SOL violation and, if the actions taken are not appropriate or sufficient, direct actions required to return the system to within limits.	This requirement replaced by proposed IRO-008-2, Requirement R6. **Proposed IRO-008-2, Requirement R6:** **R6**. Each Reliability Coordinator shall notify impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance identified in Requirement R5 has been prevented or mitigated.

Standard TOP-008-1 - Response to Transmission Limit Violations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
R1. The Transmission Operator experiencing or contributing to an IROL or SOL violation shall take immediate steps to relieve the condition, which may include shedding firm load.	This requirement replaced by approved EOP-003-1, Requirement R1 and proposed TOP-001-3, Requirements R12 and R14. **Approved EOP-003-2, Requirement R1:** **R1.** After taking all other remedial steps, a Transmission Operator or Balancing Authority operating with insufficient generation or transmission capacity shall shed customer load rather than risk an uncontrolled failure of components or cascading outages of the Interconnection. **Proposed TOP-001-3, Requirement R12:** **R12.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V. **Proposed TOP-001-3, Requirement R14:** **R14.** Each Transmission Operator shall initiate its Operating Plan to mitigate an SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment.
R2. Each Transmission Operator shall operate to prevent the likelihood that a disturbance, action, or inaction will result in an IROL or SOL violation in its area or another area of the Interconnection. In instances where there is a difference in derived operating limits, the Transmission Operator shall always operate the Bulk Electric System to the most limiting parameter.	First sentence – Replaced by proposed TOP-001-3, Requirements R12 and R14. Second sentence – Replaced by proposed TOP-001-3, Requirement R18. **Proposed TOP-001-3, Requirement R12:** **R12.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V. **Proposed TOP-001-3, Requirement R14:** **R14.** Each Transmission Operator shall initiate its Operating Plan to mitigate an SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment. **Proposed TOP-001-3, Requirement R18:** **R18**. Each Transmission Operator shall operate to the most limiting parameter in instances where there is a difference in SOLs.
R3. The Transmission Operator shall disconnect the affected facility if the overload on a transmission facility or abnormal voltage or reactive condition persists and equipment is endangered. In doing so, the Transmission Operator shall	First sentence - Placing this procedure in a requirement when it is only one of the possible options for alleviating the condition is bad practice and should not be mandated in standards. A standard should not be mandating disconnection. This is in conflict with other Reliability Standards where disconnection is dependent on System conditions and coordination with

Standard TOP-008-1 - Response to Transmission Limit Violations	
Requirement in Approved Standard	**Proposed Language in New Standard or Comment**
notify its Reliability Coordinator and all neighboring Transmission Operators impacted by the disconnection prior to switching, if time permits, otherwise, immediately thereafter.	other functional entities. Such actions, taken unilaterally, could make conditions worse. Therefore, the SDT is proposing to retire this requirement. Second sentence – In general, notification is replaced by proposed TOP-001-3, Requirement R8. **Proposed TOP-001-3, Requirement R8:** **R8**. Each Transmission Operator shall inform its Reliability Coordinator, known impacted Balancing Authorities, and known impacted Transmission Operators of its actual or expected operations that result in, or could result in, an Emergency.
R4. The Transmission Operator shall have sufficient information and analysis tools to determine the cause(s) of SOL violations. This analysis shall be conducted in all operating timeframes. The Transmission Operator shall use the results of these analyses to immediately mitigate the SOL violation.	The part of the requirement dealing with data is replaced by proposed TOP-003-3, Requirement R1. The part of the requirement dealing with analysis is replaced by proposed TOP-002-4, Requirement R1 and proposed TOP-001-3, Requirement R13. **Proposed TOP-003-3, Requirement R1:** **R1.** Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. **Proposed TOP-002-4, Requirement R1:** **R1.** Each Transmission Operator shall have an Operational Planning Analysis that will allow it to assess whether its planned operations for the next day within its Transmission Operator Area will exceed any of its System Operating Limits (SOLs). **Proposed TOP-001-3, Requirement R13:** **R13**. Each Transmission Operator shall ensure that a Real-time Assessment is performed at least once every 30 minutes.