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## FERC Directives in Order 693 Addressed in IROL Implementation Plan

The following Interconnection Reliability Operating Limit (IROL) standards were under development when the Version 0 project was initiated:

IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments

IRO-009 — Reliability Coordinator Actions to Operate Within IROLs

IRO-010 — Reliability Coordinator Data Specification and Collection

While these three standards are "new" standards, not revisions to Version 0 standards, the new standards do address some of the same topics as addressed in some of the Version 0 standards that were addressed in Order 693. The implementation plan for the new IROL standards calls for modifications or deletions to the following standards:

EOP-001-0 — Emergency Operations Planning
- Retire R2

IRO-002-1 — Reliability Coordination – Facilities
- Retire R2

IRO-004-1 — Reliability Coordination – Operations Planning
- Retire R1 through R6

IRO-005-2 — Reliability Coordination – Current Day Operations
- Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17

TOP-003-0 — Planned Outage Coordination
- Modify R1.2

TOP-005-1 — Operational Reliability Information
- Retire R1 and R1.1
- Modify Attachment 1

TOP-006-1 — Monitoring System Conditions
- Modify R4

The drafting team did not identify any directives in Order 693 relative to IRO-002 Requirement R2, TOP-003 Requirement R1.2, TOP-005 R1, R1.1, or TOP-006 Requirement R4.

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## EOP-001-0 — Emergency Operations Planning

**The IROL Implementation Plan calls for replacing EOP-001 R2 with IRO-009 R1 and R2:**

**EOP-001 R2.** The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.

**IRO-009 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.

**IRO-009 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 $T_v$.

Summary of FERC Directives from Order 693 Relative to EOP-001:
Paragraph 566. Accordingly, the Commission concludes that Reliability Standard EOP-001-0 is just, reasonable, not unduly discriminatory or preferential and in the public interest and approves it as mandatory and enforceable. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to EOP-001-0 through the Reliability Standards development process that: (1) includes the reliability coordinator as an applicable entity with responsibilities as described above; (2) clarifies the 30-minute requirement in Requirement R2 of the Reliability Standard to state that load shedding should be capable of being implemented as soon as possible but in no more than 30 minutes; (3) includes definitions of system states to be used by the operators, such as transmission-related "normal," "alert" and "emergency" states, provides criteria for entering into these states, and identifies the authority that will declare these states and (4) clarifies that the actual emergency plan elements, and not the "for consideration" elements of Attachment 1, should be the basis for compliance. Further, the Commission directs the ERO to consider a pilot program for system states, as discussed above.

*The first directive is further clarified in Paragraph 547:*

. . . Given the importance NERC attributes to the reliability coordinator in connection with matters covered by EOP-001-0, the Commission is persuaded that specific responsibilities for the reliability coordinator in the development and coordination of emergency plans must be included as part of this Reliability Standard.

**Discussion:**
**(1)** Include the reliability coordinator as an applicable entity with responsibilities as described above. .

Modifying the entire standard is outside the scope of the IROL SDT. The IROL SDT did modify the responsibility for Requirement R2 so that instead of assigning the TOP the responsibility for having load reduction plans for resolving IROLs, the RC is responsible for having action plans that will prevent and/or mitigate instances of exceeding IROLs. The TOP is not required to have the wide area view

necessary for developing action plans relative to IROLs. The proposed requirements (R1 and R2) in IRO-009 meet the intent of the first directive.

**(2)** Clarify the 30-minute requirement in Requirement R2 of the Reliability Standard to state that load shedding should be capable of being implemented as soon as possible but in no more than 30 minutes

When developing the IROL standard, the IROL drafting team determined that there are some IROLs that must be resolved in a timeframe that is shorter than 30 minutes. FAC-010 and FAC-011 require that each IROL have an associated $T_v$ – with $T_v$ defined as follows:

> The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's $T_v$ shall be less than or equal to 30 minutes.

IRO-009 R2 requires that each action plan developed to resolve an IROL must be capable of being executed such that the IROL is relieved within the IROL's $T_v$.

While the drafting team did include a reference to load shedding, the team did not highlight this as the only means of resolving an IROL.

IRO-009 R4 requires the RC to act, without delay, when actual system conditions show that there is an instance of exceeding an IROL.

As shown below, EOP-001 R4, which is not recommended for retirement by the IROL SDT, requires the TOP to have load reduction plans that can be executed within a specific timeframe.

> **EOP-001 R4.** Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
>
> **R4.1.** Communications protocols to be used during emergencies.
>
> **R4.2.** A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.

The Violation Severity Levels penalize the RC for not having action plans for IROLs identified at least a day ahead, for delays in acting to prevent exceeding an IROL, and for failure to resolve an IROL within the IROL's $T_v$.

The proposed requirements achieve the objective of the second directive.

Directives 3 and 4 are outside the scope of the IROL SDT.

## IRO-002 — Reliability Coordination – Facilities

**The IROL Implementation Plan calls for replacing IRO-002 R2 with IRO-010 R1.**

**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.

**IRO-010-1**

**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.

908. As we stated in the NOPR,**295** Reliability Standard IRO-002-1 serves an important purpose in ensuring that reliability coordinators have the information, tools and capabilities to perform their functions. The Measures and Levels of Non-Compliance submitted by NERC further enhance the Reliability Standard. Accordingly, the Commission approves Reliability Standard IRO-002-1 as mandatory and enforceable. In addition we direct the ERO to develop a modification to IRO-002-1 through the Reliability Standards development process that requires a minimum set of tools that should be made available to reliability coordinators.

**Discussion:** The certification process is expected to specify the minimum set of tools that should be made available to reliability coordinators. Tools that are used on a routine basis are needed to meet other performance-based requirements in reliability standards and allocating resources to verifying that the tools are in use is not the best use of limited resources. Addressing the directive to require a minimum set of tools that should be made available to reliability coordinators in the certification process is an equally efficient and effective method of achieving the intent of the directive.

## IRO-004

**The IROL Implementation Plan calls for the retirement of all requirements in IRO-004.**
IRO-004 R1 and R3 are the requirements for conducting a next-day reliability analyses and developing associated action plans – these were replaced with IRO-008 R1 and IRO-009 R1 and R2:

**IRO-004 R1**. Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.

**IRO-004 R3.** Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.

**IRO-008 R1.** 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.

**IRO-009 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.

**IRO-009 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 $T_v$.

935. Accordingly, we approve Reliability Standard IRO-004-1 as mandatory and enforceable. Further, we direct the ERO to modify IRO-004-1 through the Reliability Standards development process to require the next-day analysis to identify control actions that can be implemented and effective within 30 minutes after a contingency.

**Discussion:** When developing the IROL standard, the IROL drafting team determined that there are some IROLs that must be resolved in a timeframe that is shorter than 30 minutes. FAC-010 and FAC-011 require that each IROL have an associated $T_v$ – with $T_v$ defined as follows:

> The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's $T_v$ shall be less than or equal to 30 minutes.

IRO-009 R2 requires that each action plan developed to resolve an IROL must be capable of being executed such that the IROL is relieved within the IROL's $T_v$. The proposed requirement meets the intent of the directive.

During discussions with FERC staff, the drafting team was advised to address how the IROL standards achieve the intent of the directive in Order 693, paragraph 1601, which is relative to next-day analyses.

1601. . . .Therefore, we direct the ERO to modify Reliability Standard TOP-002-2 to require the next-day analysis for all IROLs to identify and communicate control actions to system operators that can be implemented within 30 minutes following a contingency to return the system to a reliable operating state and prevent cascading outages.

**Discussion:** FERC staff advised the drafting team that paragraph 1601 requires that the system operator be provided with action plans to use to prepare for the next contingency during the adjustment time period when an IROL has been exceeded but the system hasn't been returned to a "stable" or "normal" state. The plans should address every possible second contingency and should include specific control actions.

All drafting team members interpreted paragraph 1601 as requiring the development of action plans that can be implemented in time to resolve the IROL within the IROL's $T_v$ and this is required, as noted above, in IRO-009-1 Requirements R1 and R2.

## IRO-005

**The IROL Implementation Plan calls for the retirement of the R2, R3, R5, R16 and R17 and the modification of R6, R13 and R14 in IRO-005.**

IRO-005-2 ensures energy balance and transmission reliability for the current day by identifying tasks that reliability coordinators must perform throughout the day. IRO-005-1 includes 17 requirements, covering a wide range of reliability coordination activities, assigned primarily to the Reliability Coordinator. Some of the requirements in IRO-005 are recommended for retirement when IRO-009 and IRO-010 become effective. The proposed revisions to IRO-005 include retiring R2, R3, R5, R16 and R17 – and modifying R9, R13, and R14.

The directives relative to IRO-005 were aimed at adding the missing measures and levels of non-compliance (now Violation Severity Levels) and at ensuring that the penalties for exceeding IROLs were commensurate with the magnitude, duration, frequency and causes of the violations and whether these occur during normal or contingency conditions.

For the requirements in IRO-005 that have been recommended for retirement, the following address instances of exceeding IROLs:

**IRO-005 R3.** As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.

**IRO-005 R5.** Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.

**IRO-009 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. *(Violation Risk Factor: Medium)*

**IRO-009 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 $T_v$. *(Violation Risk Factor: Medium)*

**IRO-009 R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL. *(Violation Risk Factor: High)*

**IRO-009 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 $T_v$. *(Violation Risk Factor: High)*

**IRO-009 Violation Severity Levels:**

**There is a high VSL for the following:**

- Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL in its Reliability Coordinator Area, however the IROL was mitigated within the IROL $T_v$. (R4)

951. Accordingly, the Commission approves Reliability Standard IRO-005-1 as mandatory and enforceable. Further, because IRO-005-1 has no Measures or Levels of Non-Compliance, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to IRO-005-1 through the Reliability Standards development process that includes Measures and Levels of Non-Compliance. The Commission further directs that the Measures and Levels of Non-Compliance specific to IROL violations must be commensurate with the magnitude, duration, frequency and causes of the violations and whether these occur during normal or contingency conditions. Finally, the Commission directs the ERO to conduct a survey on IROL practices and actual operating experiences by requiring reliability coordinators to report any violations of IROL, their causes, the date and time, the durations and magnitudes in which actual operations exceeds IROLs to the ERO on a monthly basis for one year beginning two months after the effective date of the Final Rule. We may propose further modifications to IRO-005-1 based on the survey results.

**Discussion:**

The Violation Severity Levels, in conjunction with the Violation Risk Factors form the starting point for the determination of a penalty or sanction. The requirements associated with having action plans are assigned a "Medium" VRF – and the requirements associated with acting to prevent or mitigate instances of exceeding an IROL are assigned a "High" VRF.

**There is a high violation severity level for the following:**

- Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL $T_v$. (R4)

**There is a severe violation severity level for any of the following:**

- An IROL was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)
- An IROL identified one or more days in advance does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL's Tv. (R2)
- An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)
- Actual system conditions showed that there was an instance of exceeding an IROL, and that IROL was not resolved within the IROL's Tv. (R4)

A delay in acting to mitigate an instance of exceeding an IROL but resolving the IROL within its $T_v$ is assigned a "High" VSL. A total violation of any of these four requirements to have plans or take actions results in a "Severe" VSL. Applying the violation of the requirements to the sanctions table:

- The violation of a Medium VRF with a Severe VSL has a sanction starting point of $10-$335k (failure to have action plans)
- The violation of a High VRF with a Medium VSL has a sanction starting point of $12-$625k (delay in acting to mitigate but resolved within $T_v$)
- The violation of a High VRF with a Severe VSL has a sanction starting point of $20-$1,000k (exceeded IROL for time greater than $T_v$)

The Sanctions Guidelines give the Compliance Enforcement Authority the ability to increase or decrease the size of the penalty based on other factors, such as the number of violations, etc.

The levels of noncompliance have been replaced with violation severity levels. The combination of violation risk factors and violation severity levels meet the intent of the directive.

## TOP-003-0 — Planned Outage Coordination

**The IROL Implementation Plan calls for revising TOP-003-0 Requirement R1.2 when IRO-010 becomes effective.**

**R1.** Generator Operators and Transmission Operators shall provide planned outage information.

**R1.1** 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.

**R1.2** 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.~~

1626. Planned outage coordination is a necessary element of reliable operations, and TOP-003-0 promotes that goal. Accordingly, the Commission approves the Reliability Standard as mandatory and enforceable. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to TOP-003-0 through the Reliability Standards development process that: (1) includes a new requirement to communicate longer term outages well in advance to ensure reliability and accuracy of ATC calculation; (2) makes any facility below the voltage thresholds that, in the opinion of the transmission operator, balancing authority, or reliability coordinator, will have a direct impact on the operation of Bulk-Power System, subject to Requirement R1 for planned outage coordination and (3) incorporates an appropriate lead time for planned outages as discussed above.

**Discussion:** There are three directives, the first one applies to the ATC standards – and seems to be addressed in the proposed ATC standards. The second directive should be addressed by the Real-time BA/TOP SDT and the third directive should be addressed in the certification process for the Reliability Coordinator. Requiring the entity applying for certification produce its procedure for coordinating planned outages ensures that the procedure exists at the point in time when the entity begins operating as a Reliability Coordinator. The proposed requirement in the certification process includes:

- Require the prospective Reliability Coordinator to have a procedure for coordination of planned generation and transmission outages that includes the following:
  - Identification of a lead time for planned outages that provides sufficient time for reliability-related coordination
  - Identification of the criteria used to determine which outages to approve when there are multiple requests for outages and they can't all be approved

This is an equally efficient and effective method of meeting the intent of this directive.

## TOP-005

**The IROL Implementation Plan calls for modifying Attachment 1 of TOP-005-1 to omit the references to the Reliability Coordinator, and calls for replacing R1 and R1.1 with IRO-010-1 R1 and R3:**

**TOP-005 R1.** Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.

**R1.1** Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 "Electric System Reliability Data" and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.

**TOP-005-1 Attachment 1-TOP-005-0 - Electric System Reliability Data**

This Attachment lists the types of data that ~~Reliability Coordinators,~~ Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with ~~each~~ other Balancing Authorities and Transmission Operators.

**IRO-010 R1. 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.

**IRO-010 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. The data and information is limited to data needed by the Reliability Coordinator to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments.

1651. Accordingly, the Commission approves Reliability Standard TOP-005-1. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to TOP-005-1 through the Reliability Standards development process that: (1) includes information about the operational status of special protection systems and power system stabilizers in Attachment 1 and (2) deletes references to confidentiality agreements, but addresses the issue separately to ensure that necessary protections are in place related to confidential information.

**Discussion:** The directives are not relative to the proposed modifications to TOP-005. The attachment referenced is TOP-005-1 Requirement R3 references Attachment 1 and R3 is not being retired by the IROL SDT.

## TOP-006

**The IROL Implementation Plan calls for the modification of R4 in TOP-006 when IRO-010-1 becomes effective.**

### TOP-006-1

**R4.** Each ~~Reliability Coordinator,~~ 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.

**IRO-010 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.

**IRO-010 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. The data and information is limited to data needed by the Reliability Coordinator to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments.

1665. Accordingly, the Commission approves Reliability Standard TOP-006-1. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to TOP-006-1 through the Reliability Standards development process that: (1) includes a new requirement related to the provision of minimum capabilities that are necessary to enable operators to deal with real-time situations and to ensure reliable operation of the Bulk-Power System and (2) clarifies the meaning of "appropriate technical information" concerning protective relays.

**Discussion:** The drafting team does not believe that either of these directives is applicable to the modification proposed for R4. The directive to specify minimum capabilities is being addressed through the certification process as an equally efficient and effective method of achieving the intent of the directive. The second directive is relative to TOP-006-1 R3 which is not being modified by the IROL SDT.