

Standard Development Roadmap

This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.

Development Steps Completed:

1. SAR version 1 posted on May 15, 2007.
2. SAR version 1 comment period closed on June 13, 2007.
3. SAR version 2 posted on August 7, 2007.
4. SAR version 2 comment period closed on September 7, 2007.
5. SAR approved by SC on November 1, 2007.

Proposed Action Plan and Description of Current Draft:

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Future Development Plan:

Anticipated Actions	Anticipated Date
1. First posting of revised standards.	October 2008
2. Second posting of revised standards.	January 2009
3. Third posting of revised standards.	April 2009
4. Post for ballot.	July 2009
5. Post for re-ballot.	September 2009
6. Submit to BOT.	September 2009
7. Submit to regulatory authorities for approval.	October 2009

Definitions of Terms Used in Standard

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There are no new or revised definitions proposed in this standard revision.

A. Introduction

1. **Title:** Coordination of Transmission Operations
2. **Number:** TOP-001-2
3. **Purpose:**
To ensure coordination between and among functional entities for the reliability of the Bulk Electric System (BES).
4. **Applicability**
 - 4.1. Balancing Authorities
 - 4.2. Transmission Operators
 - 4.3. Generator Operators
 - 4.4. Distribution Providers
 - 4.5. Load-Serving Entities
5. **Effective Date:** All requirements become effective the first day of the first calendar quarter twenty-four months following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the requirements become effective the first day of the first calendar quarter twenty-four months following Board of Trustees adoption.

B. Requirements

- R1. Each Balancing Authority, Distribution Provider, Load-Serving Entity, and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless the respective entity informs the Transmission Operator that such actions would violate safety, equipment, regulatory or statutory requirements. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-day Operations, Real-Time Operations]*
- R2. Each Transmission Operator shall inform its Reliability Coordinator and affected Transmission Operators of Real-Time or anticipated Emergency conditions, including potential impacts caused by disconnections prior to switching. *[Violation Risk Factor: High] [Time Horizon: Same-day Operations, Real-Time Operations]*
- R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall render emergency assistance to others, as requested and available, unless such actions would violate safety, equipment, regulatory or statutory requirements. *[Violation Risk Factor: High] [Time Horizon: Real-Time Operations]*
- R4. Each Transmission Operator and Generator Operator shall coordinate its respective operations known or expected to affect other reliability entities with those entities unless System conditions do not permit such coordination. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-day Operations, Real-Time Operations]*
- R5. Each Transmission Operator shall inform its Reliability Coordinator of actions being taken to return the system to within limits when an IROL or SOL has been exceeded. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

- R6.** The Transmission Operator shall act or direct others to act, to mitigate the magnitude and duration of exceeding an IROL within the IROL's Tv. [*Violation Risk Factor: High*] [*Time Horizon: Real-time Operations*]
- R7.** Each Transmission Operator shall operate the Bulk Electric System to the most limiting parameter when there is a difference in derived operating limits amongst reliability entities. [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

C. Measures

- M1.** The Balancing Authority, Distribution Provider, Load-Serving Entity, and Generator Operator shall each make available upon request, in accordance with Requirement R1, evidence that it either: (a) complied with reliability directives issued by the Transmission Operator or, (b) informed the Transmission Operator that such actions would violate safety, equipment, regulatory, or statutory requirements. Such evidence could include, but is not limited to, dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence in electronic or hard copy format.
- M2.** The Transmission Operator shall make available upon request, evidence that it has informed its Reliability Coordinator and affected Transmission Operators of Real-Time or anticipated Emergency conditions, including potential impacts caused by disconnections prior to switching, in accordance with Requirement R2. Such evidence could include, but is not limited to, dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence in electronic or hard copy format.
- M3.** The Transmission Operator, Balancing Authority, and Generator Operator shall each make available upon request, evidence that requested and available emergency assistance was rendered to others in accordance with Requirement R3 unless such actions would violate safety, equipment, regulatory, or statutory requirements. Such evidence could include, but is not limited to, dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence in electronic or hard copy format.
- M4.** The Transmission Operator and Generator Operator shall each make available upon request, evidence that operations were coordinated among affected reliability entities in accordance with Requirement R4 unless System conditions do not permit such coordination. Such evidence could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence.
- M5.** The Transmission Operator shall make available evidence that it has informed its Reliability Coordinator of actions being taken to return the system to within limits when an IROL or SOL has been exceeded in accordance with Requirement R5. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, or dated computer printouts.
- M6.** The Transmission Operator shall make available evidence of when it acted or directed others to mitigate the magnitude and duration of exceeding an IROL within the IROL's

Tv in accordance with Requirement R6. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, or dated computer printouts.

- M7.** The Transmission Operator shall make available evidence such as dated operator logs, voice recordings or transcripts of voice recordings, or dated computer printouts, of any occasion when it operated to a limiting parameter due to differing operating limits amongst reliability entities in accordance with Requirement R7.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity

1.2. Compliance Monitoring and Reset Time Frame

Not applicable.

1.3. Compliance Monitoring and Enforcement Processes

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

1.4. Data Retention

The Balancing Authority, Transmission Operator, Distribution Provider, Load-Serving Entity, and Generator Operator shall each keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Balancing Authority, Distribution Provider, Load-Serving Entity, and Generator Operator shall each retain for the current calendar year and one previous calendar year, in accordance with Requirement R1 and Measurement M1, evidence that it either: (a) complied with reliability directives issued by the Transmission Operator or, (b) informed the Transmission Operator that such actions would violate safety, equipment, regulatory, or statutory requirements.
- The Transmission Operator shall retain evidence for the current calendar year and one previous calendar year that it has informed its Reliability Coordinator and affected Transmission Operators of Real-Time or anticipated Emergency conditions in accordance with Requirement R2 and Measurement M2.

- The Transmission Operator, Balancing Authority, and Generator Operator shall retain evidence for the current calendar year and one previous calendar year that requested and available emergency assistance was rendered to others in accordance with Requirement R3 and Measurement M3 unless such actions would violate safety, equipment, regulatory, or statutory requirements.
- The Transmission Operator and Generator Operator shall retain evidence for the current calendar year and one previous calendar year that operations known or expected to affect other Reliability Entities were coordinated among affected Reliability Entities in accordance with Requirement R4 and Measurement M4 unless System conditions do not permit such coordination.
- The Transmission Operator shall make available evidence for three calendar years that it has informed its Reliability Coordinator of actions being taken to return the System to within limits when an IROL or SOL has been exceeded in accordance with Requirement R5 and Measurement M5.
- The Transmission Operator shall make available evidence of when it acted, or directed others to act, to mitigate the magnitude and duration of exceeding an IROL within the IROL's Tv in accordance with Requirement R6 and Measurement M6.
- The Transmission Operator shall retain evidence for the current calendar year and one previous calendar year of any occasion when it operated to a limiting parameter due to differing operating limits amongst reliability entities in accordance with Requirement R7 and Measurement M7.

If a Balancing Authority, Transmission Operator, Distribution Provider, Load-Serving Entity, or Generator Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.5. Additional Compliance Information

None.

2. Violation Severity Levels

	Lower	Moderate	High	Severe
R1	The Balancing Authority, Distribution Provider, Load-Serving Entity, or Generator Operator did not comply with reliability directives issued by the Transmission Operator, unless the respective entity informed the Transmission Operator that such actions would violate safety, equipment, regulatory, or statutory requirements on one occasion.	The Balancing Authority, Distribution Provider, Load-Serving Entity, or Generator Operator did not comply with reliability directives issued by the Transmission Operator, unless the respective entity informed the Transmission Operator that such actions would violate safety, equipment, regulatory, or statutory requirements on two occasions.	The Balancing Authority, Distribution Provider, Load-Serving Entity, or Generator Operator did not comply with reliability directives issued by the Transmission Operator, unless the respective entity informed the Transmission Operator that such actions would violate safety, equipment, regulatory, or statutory requirements on three occasions.	The Balancing Authority, Distribution Provider, Load-Serving Entity, or Generator Operator did not comply with reliability directives issued by the Transmission Operator, unless the respective entity informed the Transmission Operator that such actions would violate safety, equipment, regulatory, or statutory requirements on four or more occasions.
R2	The Transmission Operator did not inform its Reliability Coordinator and affected Transmission Operators of real-time or Emergency conditions on one occasion.	The Transmission Operator did not inform its Reliability Coordinator and affected Transmission Operators of real-time or Emergency conditions on two occasions.	The Transmission Operator did not inform its Reliability Coordinator and affected Transmission Operators of real-time or Emergency conditions on three occasions.	The Transmission Operator did not inform its Reliability Coordinator and affected Transmission Operators of real-time or Emergency conditions on four or more occasions.
R3	N/A	N/A	N/A	The Transmission Operator, Balancing Authority, or Generator Operator did not render emergency assistance to others, as requested and available, unless such actions would violate safety, equipment, regulatory, or statutory requirements.

	Lower	Moderate	High	Severe
R4	The Transmission Operator or Generator Operator did not coordinate their respective operations known or expected to affect other reliability entities with one affected reliability entity or 25% or less of the affected reliability entities unless System conditions did not permit such coordination.	The Transmission Operator or Generator Operator did not coordinate their respective operations known or expected to affect other reliability entities with two affected reliability entities or more than 25% or less than or equal to 50% of the affected reliability entities unless System conditions did not permit such coordination.	The Transmission Operator or Generator Operator did not coordinate their respective operations known or expected to affect other reliability entities with three affected reliability entities or more than 50% or less than or equal to 75% of the affected reliability entities unless System conditions did not permit such coordination.	The Transmission Operator or Generator Operator did not coordinate their respective operations known or expected to affect other reliability entities with four or more affected entities or more than 75% of the affected entities unless System conditions did not permit such coordination.
R5	The Transmission Operator did not make available evidence that it had informed its Reliability Coordinator of actions being taken to return the system to within limits when an IROL or SOL has been exceeded on one occasion.	The Transmission Operator did not make available evidence that it had informed its Reliability Coordinator of actions being taken to return the system to within limits when an IROL or SOL has been exceeded on two occasions.	The Transmission Operator did not make available evidence that it had informed its Reliability Coordinator of actions being taken to return the system to within limits when an IROL or SOL has been exceeded on three occasions.	The Transmission Operator did not make available evidence that it had informed its Reliability Coordinator of actions being taken to return the system to within limits when an IROL or SOL has been exceeded on four or more occasions.
R6	The Transmission Operator did not make available evidence of the timing of when it acted, or directed others to act, to mitigate the magnitude and duration of exceeding an IROL within the IROL's Tv on one occasion.	The Transmission Operator did not make available evidence of the timing of when it acted, or directed others to act, to mitigate the magnitude and duration of exceeding an IROL within the IROL's Tv on two occasions.	The Transmission Operator did not make available evidence of the timing of when it acted, or directed others to act, to mitigate the magnitude and duration of exceeding an IROL within the IROL's Tv on three occasions.	The Transmission Operator did not make available evidence of the timing of when it acted, or directed others to act, to mitigate the magnitude and duration of exceeding an IROL within the IROL's Tv on four or more occasions.

	Lower	Moderate	High	Severe
R7	The Transmission Operator did not operate the BES to the most limiting parameter when there was a difference in derived operating limits amongst reliability entities on one occasion.	The Transmission Operator did not operate the BES to the most limiting parameter when there was a difference in derived operating limits amongst reliability entities on two occasions.	The Transmission Operator did not operate the BES to the most limiting parameter when there was a difference in derived operating limits amongst reliability entities on three occasions.	The Transmission Operator did not operate the BES to the most limiting parameter when there was a difference in derived operating limits amongst reliability entities on four or more occasions.

E. Regional Variances

None identified.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2	TBD	Revisions pursuant to Project 2007-03	Revised

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Simulated Contingencies – The act of using planning and operating models to replicate Contingency responses that depict the net effect of design considerations

A. Introduction

1. **Title:** **Operations Planning**
2. **Number:** TOP-002-3
3. **Purpose:** To ensure that reliability entities have coordinated plans for meeting expected operating conditions.
4. **Applicability**
 - 4.1. Transmission Operator.
5. **Effective Date:** All requirements will become effective the first day of the first calendar quarter twenty-four months following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the requirements become effective the first day of the first calendar quarter twenty-four months following Board of Trustees adoption.

B. Requirements

- R1. The Transmission Operator shall have an assessment for the next day's operation that indicates whether it will exceed any of its System Operating Limits (SOLs) during anticipated normal conditions and Simulated Contingency events. [*Violation Risk Factor: Low*] [*Time Horizon: Same-day Operations*]
- R2. The Transmission Operator shall plan to preclude operating in excess of any Interconnection Reliability Operating Limits (IROLs) including those identified as a result of the assessment performed in Requirement R1. [*Violation Risk Factor: High*] [*Time Horizon: Same-day Operations*]
- R3. The Transmission Operator shall notify all reliability entities identified in the plan(s) cited in Requirement R2 as to their role in the plan(s). [*Violation Risk Factor: High*] [*Time Horizon: Same-day Operations*]

C. Measures

- M1. The Transmission Operator shall have evidence that it has assessed next day operations in accordance with Requirement R1. Such evidence could include but is not limited to dated operator logs or reports.
- M2. The Transmission Operator shall have evidence that it has planned to preclude operating in excess of the IROLs identified as a result of the assessment performed in Requirement R1 in accordance with Requirement R2. Such evidence could include but it is not limited to plans, processes, or procedures for precluding operating in excess of each IROL.
- M3. The Transmission Operator shall make available evidence that it notified all reliability entities identified in the plan(s) cited in Requirement R2 as to their role in the plan(s) in accordance with Requirement R3. Such evidence could include but is not limited to dated operator logs, voice recordings, or e-mail records.

D. Compliance

1. Compliance Monitoring Process
 - 1.1. **Compliance Enforcement Authority**

Regional Entity

1.2. Compliance Monitoring and Reset Time Frame

Not applicable

1.3. Compliance Monitoring and Enforcement Processes

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

1.4. Data Retention

The Transmission Operator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Operator shall retain evidence for a rolling six month period that it has assessed next day operations in accordance with Requirement R1 and Measurement M1.
- The Transmission Operator shall retain evidence for a rolling six month period that it has planned to preclude operating in excess of any IROL identified as a result of the assessment performed in Requirement R1 in accordance with Requirement R2 and Measurement M2.
- The Transmission Operator shall retain evidence for a rolling twelve-month period that it notified all reliability entities identified in the plan(s) cited in Requirement R2 as to their role in the plan(s) in accordance with Requirement R3 and Measurement M3.

If a Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.5. Additional Compliance Information

None.

2. Violation Severity Levels

	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The Transmission Operator did not perform an assessment for the next day’s operation that indicated whether it will exceed any of its SOLs during anticipated normal and Contingency event conditions.
R2	N/A	N/A	N/A	The Transmission Operator did not plan to preclude operating in excess of any IROLs identified as a result of the assessment performed in Requirement R1.
R3	The Transmission Operator did not notify one of the reliability entities or 25% or less of the reliability entities identified in the plan(s) cited as to their role in the plan(s).	The Transmission Operator did not notify two of the reliability entities or more than 25% and less than or equal to 50% of the reliability entities identified in the plan(s) as to their role in the plan(s).	The Transmission Operator did not notify three of the reliability entities or more than 50% and less than or equal to 75% of the reliability entities identified in the plan(s) as to their role in the plan(s).	The Transmission Operator did not notify four or more of the reliability entities or more than 75% of the reliability entities identified in the plan(s) as to their role in the plan(s).

E. Regional Variances

None identified.

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There are no new or revised definitions proposed in this standard revision.

A. Introduction

- 1. Title:** **Operational Reliability Data**
- 2. Number:** TOP-003-1
- 3. Purpose:** To ensure that the Transmission Operator and Balancing Authority have the data needed to plan and operate the Transmission system.
- 4. Applicability**
 - 4.1.** Transmission Operators.
 - 4.2.** Balancing Authorities.
 - 4.3.** Generator Owners.
 - 4.4.** Generator Operators.
 - 4.5.** Interchange Authorities.
 - 4.6.** Load-Serving Entities.
 - 4.7.** Transmission Owners.
- 5. Effective Date:** All requirements will become effective the first day of the first calendar quarter twenty-four months following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the requirements become effective the first day of the first calendar quarter twenty-four months following Board of Trustees adoption.

B. Requirements

- R1.** Each Transmission Operator and Balancing Authority shall have a documented specification for data to support its Real-time monitoring and reliability assessments. The specification shall include: *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
 - R1.1.** A list of required data to be exchanged.
 - R1.2.** A mutually agreeable format.
 - R1.3.** A timeframe and periodicity for providing data.
- R2.** Each Transmission Operator shall distribute its data specification to entities that have Facilities monitored by the Transmission Operator and to entities that provide Facility status to the Transmission Operator. *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
- R3.** Each Balancing Authority shall distribute its data specification to entities that provide Facility status to the Balancing Authority. *[Violation Risk Factor: Low] [Time Horizon: Operations Planning]*
- R4.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-Serving Entity, and Transmission Owner shall provide data, as specified in Requirement R1, to its Transmission Operator(s). *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-day Operations, Real-Time Operations]*
- R5.** Each Transmission Operator and Balancing Authority shall provide to other Transmission Operators and Balancing Authorities with immediate responsibility for operational reliability, the data requested by those other Transmission Operators and Balancing Authorities necessary

for Real-time monitoring and reliability assessments. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning, Same-day Operations, Real-Time Operations*]

C. Measures

- M1.** Each Transmission Operator and Balancing Authority shall make available its dated, current, in force documented specification for data to support its reliability assessments in accordance with Requirement R1.
- M2.** Each Transmission Operator shall make available evidence that it has distributed its data specification to entities that have Facilities monitored by the Transmission Operator and to entities that provide Facility status to the Transmission Operator in accordance with Requirement R2. Such evidence could include but is not limited to dated operator logs, voice recordings, postal receipts showing the recipient, date and contents, or e-mail records.
- M3.** Each Balancing Authority shall make available evidence that it has distributed its data specification to entities that provide Facility status to the Balancing Authority in accordance with Requirement R3. Such evidence could include but is not limited to dated operator logs, voice recordings, postal receipts showing the recipient, or e-mail records.
- M4.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-Serving Entity, and Transmission Owner shall make available evidence that it has provided data, as specified in Requirement R1, to its Transmission Operator(s) in accordance with Requirement R4. The data is limited to that needed by the Transmission Operator to support Operational Planning Analyses and reliability assessments. Such evidence could include but is not limited to dated operator logs, voice recordings, or e-mail records.
- M5.** Each Transmission Operator and Balancing Authority shall make available evidence that it has provided to other Transmission Operators and Balancing Authorities with immediate responsibility for operational reliability, the data requested by those entities necessary for reliability assessments and Real-time operation in accordance with Requirement R5. Such evidence could include but is not limited to dated operator logs, voice recordings, or e-mail records.

D. Compliance

- 1. Compliance Monitoring Process**
 - 1.1. Compliance Monitoring Process**
 - Regional Entity
 - 1.2. Compliance Monitoring Period and Reset Timeframe**
 - Not applicable
 - 1.3. Compliance Monitoring and Enforcement Processes**
 - Compliance Audits
 - Self-Certification
 - Spot Checking
 - Compliance Violation Investigations
 - Self-Reporting

Complaints

1.4. Data Retention

Each responsible entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- Each Transmission Operator and Balancing Authority shall retain their dated, current, in force, documented specification for data to support their reliability assessments in accordance with Requirement R1 and Measurement M1 as well as any documents in force since the last compliance audit.
- Each Transmission Operator shall retain evidence for three calendar years that it has distributed its data specification to entities that have Facilities monitored by the Transmission Operator and to entities that provide Facility status to the Transmission Operator in accordance with Requirement R2 and Measurement M2.
- Each Balancing Authority shall retain evidence for three calendar years that it has distributed its data specification to entities that provide Facility status to the Balancing Authority in accordance with Requirement R3 and Measurement M3.
- Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-Serving Entity, and Transmission Owner shall retain evidence for 90 calendar days that it has provided data, as specified in Requirement R1, to its Transmission Operator(s) in accordance with Requirement R4 and Measurement M4.
- Each Transmission Operator and Balancing Authority shall retain evidence for 90 calendar days that it has provided to other Transmission Operators and Balancing Authorities with immediate responsibility for operational reliability, the data requested by those entities necessary for reliability assessments and Real-Time operations in accordance with Requirement R5 and Measurement M5.

If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.5. Additional Compliance Information

None

2. Violation Severity Levels

	Lower	Moderate	High	Severe
R1	The Transmission Operator or Balancing Authority did not have one of the required elements of the documented specification for data to support its real-time monitoring and reliability assessments.	The Transmission Operator or Balancing Authority did not have two of the required elements of the documented specification for data to support its real-time monitoring and reliability assessments.	N/A	The Transmission Operator or Balancing Authority did not have a documented specification for data and information to support its real-time monitoring and reliability assessments.
R2	The Transmission Operator did not distribute its data specification to one entity or 25% or less of the entities that has Facilities monitored by the Transmission Operator or to one entity or 25% or less of the entities that provide Facility status to the Transmission Operator.	The Transmission Operator did not distribute its data specification to two entities or more than 25% and less than or equal to 50% of the entities that have Facilities monitored by the Transmission Operator or to two entities or more than 25% and less than or equal to 50% of the entities that provide Facility status to the Transmission Operator.	The Transmission Operator did not distribute its data specification to three entities or more than 50% and less than or equal to 75% of the entities that have Facilities monitored by the Transmission Operator or to three entities or more than 50% and less than or equal to 75% of the entities that provide Facility status to the Transmission Operator.	The Transmission Operator did not distribute its data specification to four or more entities or more than 75% of the entities that have Facilities monitored by the Transmission Operator or to four or more entities or more than 75% of the entities that provide Facility status to the Transmission Operator.
R3	The Balancing Authority did not distribute its data specification to one entity or 25% or less of the entities that provide Facility status to the Balancing Authority.	The Balancing Authority did not distribute its data specification to two entities or more than 25% and less than or equal to 50% of the entities that provide Facility status to the Balancing Authority.	The Balancing Authority did not distribute its data specification to three entities or more than 50% and less than or equal to 75% of the entities that provide Facility status to the Balancing Authority.	The Balancing Authority did not distribute its data specification to four or more entities or more than 75% of the entities that provide Facility status to the Balancing Authority.
R4	N/A	N/A	N/A	The Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-Serving Entity, or Transmission Owner did not

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				provide data and information, as specified in Requirement R1, to its Transmission Operator(s).
R5	N/A	N/A	N/A	The Transmission Operator or Balancing Authority did not provide to other Transmission Operators or Balancing Authorities with immediate responsibility for operational reliability, the data and information requested by those entities necessary for real-time monitoring and reliability assessments.

E. Regional Variances

None identified.

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This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.

Development Steps Completed:

1. SAR version 1 posted on May 15, 2007.
2. SAR version 1 comment period closed on June 13, 2007.
3. SAR version 2 posted on August 7, 2007.
4. SAR version 2 comment period closed on September 7, 2007.
5. SAR approved by SC on November 1, 2007.

Proposed Action Plan and Description of Current Draft:

The SDT began meeting in January 2008 following the approval of the SAR by the SC. The schedule shows completion of the project in 3Q09. The current draft is the first posting of the revised standards. As part of the proposed revisions, TOP-005-1, TOP-006-1, TOP-007-0, TOP-008-0, and PER-001-0 will be retired. The requirements in those standards have been eliminated or moved to other standards within this project. Some changes made in this project are dependent on corresponding changes to Project Pre-2006, Operate Within Interconnection Reliability Operating Limits (IRO-008 through IRO-010), and Project 2006-06, Reliability Coordination, being approved.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. First posting of revised standards.	October 2008
2. Second posting of revised standards.	January 2009
3. Third posting of revised standards.	April 2009
4. Post for ballot.	July 2009
5. Post for re-ballot.	September 2009
6. Submit to BOT.	September 2009
7. Submit to governmental authorities.	October 2009

Definitions of Terms Used in Standard

This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.

There are no new or revised definitions proposed in this standard revision.

A. Introduction

1. **Title:** Real-time Transmission Operations
2. **Number:** TOP-004-3
3. **Purpose:** To ensure that Transmission Operators act to preserve the reliability of the Bulk Electric System in Real-time.
4. **Applicability:**
 - 4.1. Transmission Operators.
5. **Proposed Effective Date:** All requirements will become effective the first day of the first calendar quarter twenty-four months following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the requirements become effective the first day of the first calendar quarter twenty-four months following Board of Trustees adoption.

B. Requirements

- R1. Each Transmission Operator shall operate within each identified Interconnection Reliability Operating Limits (IROLs) and its associated IROL T_v . [*Violation Risk Factor: High*] [*Time Horizon: Real-time Operations*]
- R2. Each Transmission Operator shall have Agreements with directly interconnected Transmission Operators that specify switching of synchronous BES tie lines. [*Violation Risk Factor: Low*] [*Time Horizon: Operations Planning, Same-day Operations, Real-Time Operations*]

C. Measures

- M1. Each Transmission Operator shall make available evidence for any occasion in which it has operated outside identified Interconnection Reliability Operating Limits (IROLs) and their associated IROL T_v as specified in Requirement R1. Such evidence could include but is not limited to dated computer logs or reports in electronic or hard copy format specifying the date, time, duration, and details of the excursion outside of the identified IROL and applicable IROL T_v .
- M2. Each Transmission Operator shall make available evidence that it has Agreements with directly interconnected Transmission Operators that specify switching of synchronous BES tie lines in accordance with Requirement R2. Such evidence could include but is not limited to a dated document with confirmation of the Agreement in electronic or hard copy format.

D. Compliance

1. **Compliance Monitoring Process**
 - 1.1. **Compliance Enforcement Authority**
Regional Entity
 - 1.2. **Compliance Monitoring and Reset Time Frame**
Not applicable
 - 1.3. **Compliance Monitoring and Enforcement Processes**
Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

Exception Reporting of any occasion in which it has operated outside an identified IROL and the applicable IROL T_v as specified in Requirement R1 and Measurement M1.

1.4. Data Retention

The Transmission Operator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Transmission Operator shall retain evidence for three calendar years of any occasion in which it has operated outside identified IROL and its associated IROL T_v as specified in Requirement R1 and Measurement M1.
- The Transmission Operator shall retain evidence that it has current in force Agreements with directly interconnected Transmission Operators that specify switching of synchronous BES tie lines in accordance with Requirement R2 and Measurement M2 as well as any Agreements in force since the last compliance audit.

If a Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.5. Additional Compliance Information

Submit exception reports of each instance of exceeding an IROL for time greater than the associated IROL T_v to the Compliance Enforcement Authority within thirty calendar days of the event.

2. Violation Severity Levels

R#	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The Transmission Operator did not operate within an identified Interconnection Reliability Operating Limits (IROL) and the associated IROL T_v for any single occasion.
R2	The Transmission Operator does not have Agreements with one of its directly interconnected Transmission Operators or 25% or less of its directly interconnected Transmission Operators that address switching of synchronous BES tie lines.	The Transmission Operator does not have Agreements with two of its directly interconnected Transmission Operators or more than 25% and less than or equal to 50% of its directly interconnected Transmission Operators that address switching of synchronous BES tie lines.	The Transmission Operator does not have Agreements with three of its directly interconnected Transmission Operators or more than 50% and less than or equal to 75% of its directly interconnected Transmission Operators that address switching of synchronous BES tie lines.	The Transmission Operator does not have Agreements with four or more of its directly interconnected Transmission Operators or more than 75% of its directly interconnected Transmission Operators that address switching of synchronous BES tie lines.

E. Regional Variances

None identified.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Added language from Missing Measures and Compliance Elements adopted by Board of Trustees on November 1, 2006	Revised
2	December 19, 2007	Revised to reflect merging of both sets of changes approved by BOT on November 1, 2006 (Addition of measures and compliance elements and revisions to R3 and R6 with conforming changes made as errata to Levels of Non-compliance)	Revised Errata
3	TBD	Changes pursuant to Project 2007-03	Revised