

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. SC authorized the SAR and assembled a drafting team on December 5, 2006.
2. The revisions to IRO-006 to transfer business practice content to NAESB were approved as IRO-006-4 by the Board of Trustees on October 23, 2007.
3. The SDT has developed a first draft for industry consideration and posted it for comments from October 30, 2008 to December 1, 2008.
4. The SDT has developed this second draft for industry consideration.

Description of Current Draft:

This is the second draft of the proposed standard posted for stakeholder comments.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Respond to Comments (Draft 2).	June 26, 2009
2. Posting for 30-day Pre-Ballot Review.	June 26, 2009
3. Initial Ballot.	July 27, 2009
4. Respond to comments.	September 10, 2009
5. Recirculation ballot.	September 10, 2009
6. Board adoption.	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.

Reallocation: ~~The total or partial curtailment of Transactions during TLR Level 3a or 5a to allow Transactions using higher priority to be implemented.~~ (To be retired.)

Market Flow: the total amount of generation-to-load impact ~~energy~~ flowing across a specified facility or set of facilities due to a market dispatch. ~~the operation of a market that has implemented a “Market Flow Calculation” methodology.~~

A. Introduction

1. **Title:** Transmission Loading Relief Procedure for the Eastern Interconnection
2. **Number:** IRO-006-~~E~~EAST-1
3. **Purpose:** To provide an Interconnection-wide transmission loading relief procedure (TLR) for the Eastern Interconnection that can be used to prevent and/or mitigate potential or actual System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) ~~violations~~ exceedances to maintain reliability of the ~~bulk-Bulk electric-Electric system~~System (BES).
4. **Applicability:**
 - 4.1. Reliability Coordinators in the Eastern Interconnection.
5. **Effective Date:** First day of the first calendar quarter ~~that~~ after the date this standard and IRO-006-5 are both approved by applicable regulatory authorities, ~~;~~ or in those jurisdictions where regulatory approval is not required, the standard becomes effective on the first day of the first calendar quarter after the date this standard and IRO-006-5 are both approved by the NERC Board of Trustees.

B. Requirements

- R1. The Reliability Coordinator shall not use the Eastern Interconnection TLR procedure alone to mitigate an ~~actual-IROL violation~~exceedance. When acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding an IROL within that IROL's T, ~~responding to an actual IROL violation~~, each Reliability Coordinator shall ~~implement~~ initiate other more effective actions prior to or in conjunction with the initiation ~~or continuing management~~ of this TLR procedure (or continuing management of this procedure if already initiated), including, but not limited to, the following: reconfiguration, redispatch, use of demand-side management, and load shedding. ~~- [Violation Risk Factor: Medium/High] [Time Horizon: Real-time Operations]~~
- R2. When initiating the Eastern Interconnection TLR procedure to prevent or mitigate an SOL or IROL ~~violation~~exceedance, and at least every clock hour after initiation, up to and including the hour when the TLR level has been identified as TLR Level 0, the Reliability Coordinator shall identify: *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*
 - R2.1. The TLR level in accordance with the criteria in Appendix A, and
 - R2.2. A ~~proposal for~~list of actions to take, based on the TLR level chosen.
- R3. Upon the identification of the TLR level and a ~~proposal for~~list of actions to take based on the TLR level chosen, the Reliability Coordinator initiating this TLR procedure shall: *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*
 - R3.1. Notify all Reliability Coordinators in the Eastern Interconnection of the identified TLR level
 - R3.2. Communicate the ~~proposed~~list of actions to take to:
 - R3.2.1. All Reliability Coordinators in the Eastern Interconnection, and

R3.2.2. Those Reliability Coordinators in other Interconnections responsible for curtailing or reloading Interchange Transactions crossing Interconnection boundaries identified in the ~~proposed~~ list of actions.

R3.3. Request that the following entities implement the ~~proposed~~ actions identified in Requirement R2.2: [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

~~R3.3.1.~~ Each Reliability Coordinator associated with a Sink Balancing Authority in the Eastern Interconnection for which Interchange Transactions are ~~proposed for to be~~ curtailed ~~ment~~ or reloaded ~~ing~~

R3.3.1.

R3.3.2. Each Reliability Coordinators associated with a Balancing Authority in the Eastern Interconnection for which Network Integration Transmission Service or Native Load is ~~proposed for to be~~ curtailed ~~ment~~ or reloaded ~~ing~~

~~R3.3.3.~~ Each Reliability Coordinator associated with a Balancing Authority in the Eastern Interconnection for which ~~proposed its to provide~~ Market Flow is to be curtailed ~~ment~~ or reloaded ~~ing~~.

R3.3.3.

R3.3.4. Each Reliability Coordinators associated with a Balancing Authority in the Eastern Interconnection operating a DC-tie for an Interchange Transaction sinking outside the Eastern Interconnection and crossing an interconnection boundary with an Interchange Transaction to be ~~proposed for~~ curtailed ~~ment~~ or reloaded ~~ing~~.

R4. Each Reliability Coordinator in the Eastern Interconnection that ~~responds to~~ receives a request as described in Requirement R3.3, shall comply with the request by taking one or more of the following three sets of actions: [*Violation Risk Factor: Medium*] [*Time Horizon: Real-time Operations*]

R4.1.1) Implement the communicated actions requested by the issuing Reliability Coordinator as follows:

- Direct its Balancing Authorities to implement the Interchange Transaction schedule change requests.
- Direct its Balancing Authorities to provide the Network Integrated Transmission Service and Native Load schedule changes for which the Balancing Authorities are responsible.
- Direct its Balancing Authorities to provide the Market Flow schedule changes for which the Balancing Authorities are responsible.

R4.2.2) Implement a procedure pre-approved by the ERO for use by the responding Reliability Coordinator in lieu of implementing some or all of the requested actions in the first set under Requirement R4 ~~R4.1~~, provided that its implementation is expected to prevent or mitigate the SOL or IROL ~~violation~~ exceedance with the same or greater effect than the actions not implemented in ~~R4.1~~ the first set of actions under Requirement R4.

R4.3.3) Implement alternate actions to those in R4.1 or R4.2 the first two sets of actions under Requirement R4 provided that:

R4.3.1. Analysis shows that some or all of the actions in R4.1 the first set of actions under Requirement R4 or R4.2 the second set of actions under Requirement R4 will result in a reliability concern or will be ineffective, and

•

• The alternate actions have been agreed to by the initiating Reliability Coordinator, and

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P4.3.3. • Analysis shows that the alternate actions will not adversely affect reliability.

- R5.** Each Reliability Coordinator that responds to a TLR event shall acknowledge to the initiating Reliability Coordinator the actions it will take pursuant to Requirement R4 as soon as possible but not more than ~~within thirty ten~~ minutes ~~of~~ after receiving the request. [Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]

C. Measures

- M1.** Each Reliability Coordinator shall provide evidence (such as logs, voice recordings, or other information) that when acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding an IROL within that IROL's T_v experiencing an actual IROL, the Eastern Interconnection TLR procedure was not the sole remedy used to mitigate the violation, the Eastern Interconnection TLR procedure was not used alone to mitigate an IROL exceedance, and other more effective actions ~~actions other than TLR were initiated to mitigate the violation prior to or in conjunction with the initiation or continuing management of the TLR procedure. (R1):~~
- M2.** Each Reliability Coordinator shall provide evidence (such as logs, voice recordings, or other information) that at the time it initiated the Eastern Interconnection TLR procedure, and at least every clock hour after initiation, up to and including the hour when the TLR level was identified as TLR Level 0, the Reliability Coordinator identified both the TLR Level in accordance with Appendix A and a list of ~~proposal for~~ actions to take based on the TLR level chosen. (R2):
- M3.** Each Reliability Coordinator shall provide evidence (such as logs, voice recordings, or other information) that once it identified a TLR level and a ~~proposal for~~ proposal for a list of proposed actions to take, it:
- 1.) ~~communicated the TLR Level to n~~ Notified all Reliability Coordinators in the Eastern i ~~nterconnection of the TLR Level,~~
 - 2.) ~~e~~ Communicated the list of proposed actions to all Reliability Coordinators in the Eastern I ~~nterconnection and those Reliability Coordinators in other~~ Interconnections responsible for curtailing or reloading Interchange

Transactions crossing Interconnection boundaries identified in the list of ~~proposed~~ actions, and

3.) ~~Requested the Reliability Coordinators identified in the Requirement to implement the ~~proposed~~ actions. (R3);~~

M4. Each Reliability Coordinator shall provide evidence (such as logs, voice recordings, or other information) that upon receipt of a request to implement proposed actions as described in Requirement R3, the Reliability Coordinator did one or more of the following:

1.) ~~Implemented the requested actions,~~

2.) ~~Implemented an alternative procedure that had been pre-approved by the ERO in lieu of some or all of the actions requested with equal or greater effect than the request actions not being implemented,~~

3.) ~~Implemented alternate actions, ~~provided that~~ based on analysis which showed that some or all of the actions in 1 or 2 would have resulted in a reliability concern or would have been ineffective, the alternate actions were agreed to by the initiating Reliability Coordinator, and analysis showed that the alternate actions would not adversely affect reliability. (R4);~~

M5. Each Reliability Coordinator shall provide evidence (such as logs, voice recordings, or other information) that within ten ~~thirty~~ minutes of receiving a request to implement actions pursuant to the implementation of the Eastern Interconnection TLR procedure, it acknowledged to the initiating Reliability Coordinator the actions it ~~took~~ will take in response to their request. (R5)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Data Retention

The Reliability Coordinator 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 Reliability Coordinator shall maintain evidence to show compliance with Requirements R1, R2, R3, R4, and R5 for the past 12 months plus the current month ~~most recent three calendar years plus the current year.~~
- If a Reliability Coordinator, ~~Balancing Authority, or 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.

1.4. Compliance Monitoring and Enforcement Processes:

The following processes may be used:

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.5. Additional Compliance Information

None.

1.3. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1				<p><u>The Reliability Coordinator used the Eastern Interconnection TLR procedure alone to mitigate an IROL exceedance.</u></p> <p style="text-align: center;"><u>OR</u></p> <p><u>When acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding an IROL within that IROL's T_v, the Reliability Coordinator did not initiate other more effective actions prior to or in conjunction with the initiation of this TLR procedure (or continuing management of this procedure if already initiated).The Reliability Coordinator experienced an actual IROL violation and did not initiate actions other than TLR to mitigate the violation prior to the initiation or continuing management of the TLR procedure utilized the Eastern Interconnection TLR procedure as the sole remedy to mitigate the violation.</u></p>

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R2	<p><u>The Reliability Coordinator initiating the Eastern Interconnection TLR procedure missed identifying the TLR Level in accordance with Appendix A and/or a list of actions to take based on the TLR level chosen for one clock hour during the period from initiation up to the hour when the TLR level was identified as TLR Level 0.</u></p>	<p><u>The Reliability Coordinator initiating the Eastern interconnection TLR procedure missed identifying the TLR Level in accordance with Appendix A and/or a list of actions to take based on the TLR level chosen for two clock hours during the period from initiation up to the hour when the TLR level was identified as TLR Level 0.</u></p>	<p><u>The Reliability Coordinator initiating the Eastern interconnection TLR procedure missed identifying the TLR Level in accordance with Appendix A and/or a list of actions to take based on the TLR level chosen for three clock hours during the period from initiation up to the hour when the TLR level was identified as TLR Level 0.</u></p>	<p><u>The Reliability Coordinator initiating the Eastern interconnection TLR procedure missed identifying the TLR Level in accordance with Appendix A and/or a list of actions to take based on the TLR level chosen for four or more clock hours during the period from initiation up to the hour when the TLR level was identified as TLR Level 0.</u> The Reliability Coordinator initiating the Eastern interconnection TLR procedure did not, at the time of initiation and at least every clock hour after initiation, up to and including the hour when the TLR level was identified as TLR Level 0, identify the TLR Level in accordance with Appendix A and identify a proposal for actions to take based on the TLR level chosen.</p>
R3	<p><u>The initiating Reliability Coordinator did not communicate the TLR level notify to one or more Reliability Coordinators in the Eastern Interconnection of the TLR Level (R3.1)</u></p>	<p><u>Not applicable.</u></p>	<p><u>The initiating Reliability Coordinator did not communicate the list of actions to one or more of the required Reliability Coordinators, which are defined as all Eastern Interconnection Reliability Coordinators and any Reliability Coordinators in other</u></p>	<p>The initiating Reliability Coordinator did not communicate the proposed actions to one or more of the required Reliability Coordinators, which are defined as all Eastern Interconnection Reliability Coordinators and any Reliability Coordinators in other</p>

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R4			<p><u>Interconnections responsible for curtailing or reloading Interchange Transactions crossing Interconnection boundaries identified in the list of actions. (R3.2)</u></p> <p><u>OR</u></p> <p><u>The initiating Reliability Coordinator requested some, but not all, of the Reliability Coordinators identified in R3.3 to implement the identified proposed actions.</u></p>	<p>Interconnections responsible for curtailing or reloading Interchange Transactions crossing Interconnection boundaries identified in the proposed actions.</p> <p>OR</p> <p><u>The initiating Reliability Coordinator did not request requested nthat one or more of the Reliability Coordinators identified in R3.3 to implement the identified proposed actions.</u></p> <p><u>The responding Reliability Coordinator did not take one or more of the following actions:</u></p> <ol style="list-style-type: none"> <u>1.) Implemented the requested actions.</u> <u>2.) Implemented an alternative procedure that had been pre-approved by the ERO in lieu of some or all of the actions requested with equal or greater effect than the requested actions not being implemented.</u> <u>3.) Implemented alternate actions , provided that based on analysis which showed that some or all of the actions in 1 or</u>

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R5	<p>The responding Reliability Coordinator communicated its actions taken to the initiating Reliability Coordinator, but did so more than thirtyten minutes but not more than fifteen minutes after receiving the request. (but not more than forty minutes after receiving the request).</p>	<p>The responding Reliability Coordinator communicated its actions taken to the initiating Reliability Coordinator, but did so more than fifteen forty minutes but not more than twenty minutes after receiving the request. (but not more than fifty minutes after receiving the request).</p>	<p>The responding Reliability Coordinator communicated its actions taken to the initiating Reliability Coordinator, but did so more than fiftytwenty minutes but not more than twenty five minutes after receiving the request. (but not more than one hour after receiving the request).</p>	<p>2 would have resulted in a reliability concern or would have been ineffective, and that the alternate actions would not adversely affect reliability and were agreed to by the initiating Reliability Coordinator, and analysis showed that the alternate actions would not adversely affect reliability.</p> <p>The responding Reliability Coordinator communicated its actions to the initiating Reliability Coordinator, but did so more than twenty five one hour minutes after receiving the request.</p> <p style="text-align: center;"><u>OR</u></p> <p>The responding Reliability Coordinator did not communicate its actions to the initiating Reliability Coordinator.</p> <p style="text-align: center;"><u>OR</u></p> <p>The responding Reliability Coordinator communicated its actions to the initiating Reliability Coordinator in time, but the actions communicated did not match those implemented failed to acknowledge all of the actions requested.</p>

E. Regional Differences

None.

F. Associated Documents

G. Revision History

Version	Date	Action	Tracking
1		Creation of new standard, incorporating concepts from IRO-006-4 Attachment; elimination of Regional Differences, as the standard allows the use of Market Flow	New

Appendix A

The following criteria are intended to assist the Reliability Coordinator in determining what level of TLR to call. However, the Reliability Coordinator has the discretion to choose any of these levels regardless of the criteria listed below, provided the Reliability Coordinator has reliability reasons to take such action.

Level	System Condition
TLR-1	<ul style="list-style-type: none"> • At least one Transmission Facility is expected to approach or exceed its SOL or IROL within 8 hours.
TLR-2	<ul style="list-style-type: none"> • At least one Transmission Facility is approaching or is at its SOL or IROL. <ul style="list-style-type: none"> ○ Analysis shows that holding new and increasing non-firm transactions and energy flows for the next hour can prevent exceeding this SOL or IROL.
TLR-3a	<ul style="list-style-type: none"> • At least one Transmission Facility is expected to exceed its SOL or IROL within the next hour. <ul style="list-style-type: none"> ○ Analysis shows that full or partial curtailment or reallocation¹ of non-firm transactions and energy flows can prevent exceeding this SOL and IROL.
TLR-3b	<ul style="list-style-type: none"> • At least one Transmission Facility is exceeding its SOL or IROL, or • At least one Transmission Facility is expected to exceed its SOL or IROL within the current hour. <ul style="list-style-type: none"> ○ Analysis shows that full or partial curtailment or reallocation² of non-firm transactions and energy flows can prevent exceeding this SOL or IROLs.
TLR-4	<ul style="list-style-type: none"> • At least one Transmission Facility is expected to exceed its SOL or IROL. <ul style="list-style-type: none"> • Analysis shows that full curtailment of non-firm transactions and energy flows, or reconfiguration of the transmission system can prevent exceeding this SOL or IROL.
TLR-5a	<ul style="list-style-type: none"> • At least one Transmission Facility is expected to exceed its SOL or IROL when the next-hour's transactions start. • Analysis shows that either of the following sets of actions can prevent exceeding the SOL or IROL: <ul style="list-style-type: none"> ○ Full curtailment non-firm transactions and energy flows, or ○ Reconfiguration of the transmission system, and full or partial curtailment or reallocation³ of firm transactions and energy flows.

¹ [“Reallocation” is a term defined within the NAESB TLR standards.](#)

² [“Reallocation” is a term defined within the NAESB TLR standards.](#)

³ [“Reallocation” is a term defined within the NAESB TLR standards.](#)

TLR-5b	<ul style="list-style-type: none">• At least one Transmission Facility is exceeding its SOL or IROL, or• At least one Transmission Facility is expected to exceed its SOL or IROL within the current hour.• Analysis shows that either of the following sets of actions can prevent exceeding the SOL or IROL:<ul style="list-style-type: none">○ Full curtailment of non-firm transactions and energy flows, or○ Reconfiguration of the transmission system, and full or partial curtailment or reallocation of firm transactions and energy flows.
<u>TLR-0</u>	<ul style="list-style-type: none">• <u>No transmission facilities are expected to approach or exceed their SOL or IROL within 8 hours, and the ICM procedure may be terminated</u>