Joint
NERC/NAESB
System Operator's
Transmission Loading Relief (TLR)
Reference Manual

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Preface

Manual Objectives

- Understand overall TLR procedure - both reliability and commercial aspects
- Understand different levels of curtailment and associated reloading of interchange transactions
- Understand how to implement TLR procedure
- Understand the severity of violations for non-compliance

Background and Purpose

In accordance with a decision made by the NERC Version 0 Drafting Team (SDT) and the NAESB Business Practice Subcommittee (BPS) in August of 2004, the TLR procedure was divided into two documents representing the aspects of IRO-006 that are reliability-related and those aspects that are commercial in nature and are related to how the process is implemented equally and without bias to all parties involved.

This effort resulted in two documents — (1) NERC Document IRO-006 which defines the procedures for adjusting interchange transactions, network and native load contributions and market dispatch contributions to relieve overloads on the transmission facilities modeled in the Interchange Distribution Calculator (IDC) and (2) the NAESB TLR Business Practice for the Eastern Interconnection that defines the commercial aspects of how the interchange transactions, network and native load contributions and market dispatch contributions will be carried out.

Due to former industry concerns that the elements of this standard are extremely co-dependent, it was determined that a Joint System Operator Reference Manual would be created to merge the two documents to provide an integrated view of both the NERC and NAESB standards. The purpose of this document is to assist the operator in obtaining a better understanding of the overall TLR process whether it is reliability (NERC) or a commercial aspect (NAESB).

Operator Manual Structure

The operator manual is a combination of NERC and NAESB standards. It is developed from the NERC Reliability Standard IRO-006-4 and the NAESB Business Practice (Version 1). NERC standards are represented in black, non-italicized text, while the NAESB Standards are represented in *blue, italicized text.*

The "actual" wording for each representative standard has been taken and inserted into the document along with its respective standards numbering. However, some wording has been added in order to assist the reader in delineating from one aspect of the standard to another (reliability to commercial) and to allow the text to flow in a more understandable format. This introductory "flow"/transition language has been added where necessary and is shown in red, non-italicized text.

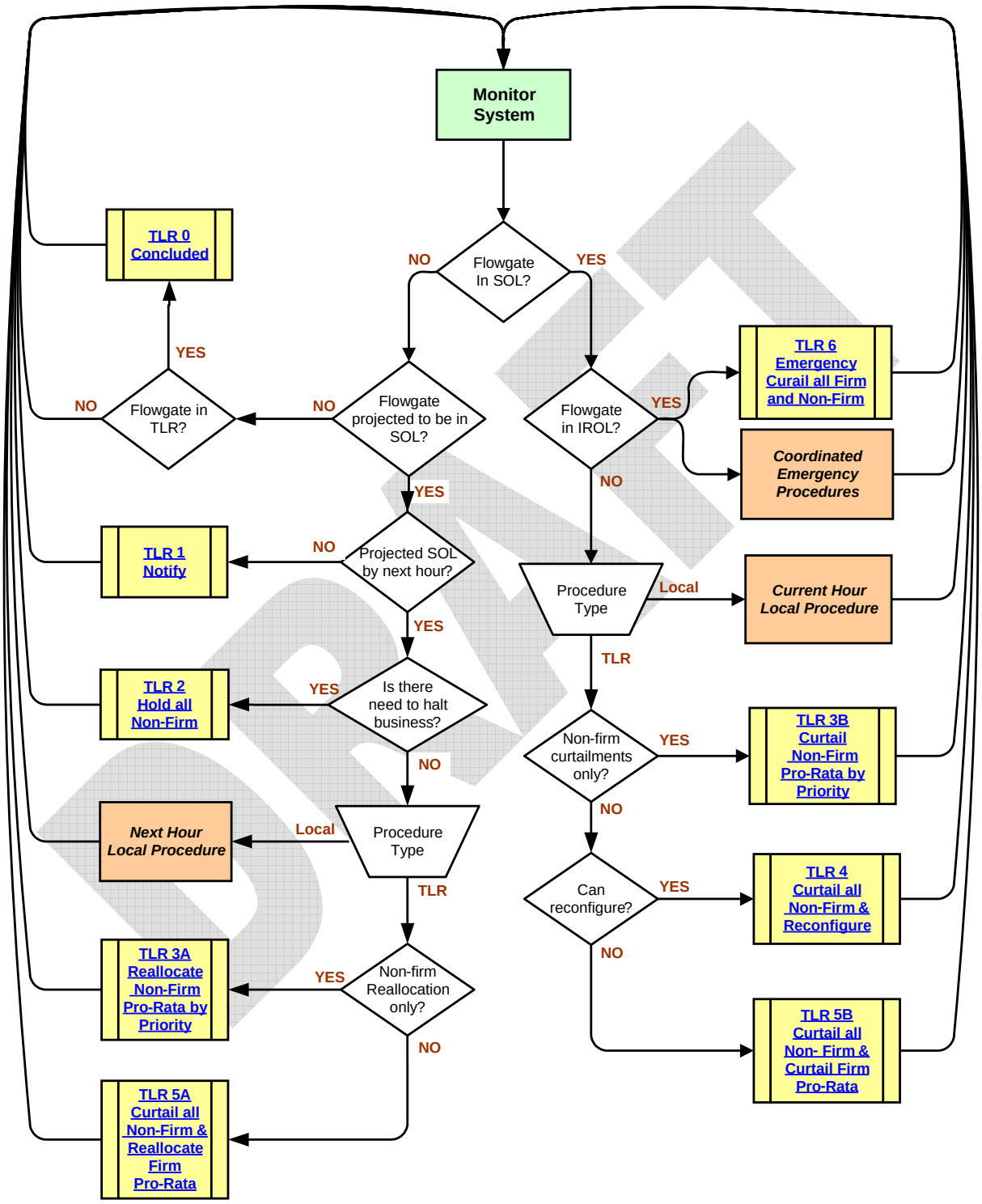
This operator manual is not intended to replace the NERC-approved reliability standards or the NAESB-approved Business Practice Standards. It has been created to simplify the TLR process for system operators by combining all aspects of the process into one easy reference. The document may also simplify any operator training efforts on the overall TLR process.

Future Maintenance of the Manual and Standards

The Joint System Operator Reference Manual will be maintained through an established Joint Standards Development Process between NERC and NAESB so that anytime one party considers making a change to their respective document, a joint meeting will be held to discuss implications and modifications, if any, which would be required to both standards. Upon receipt of either organization receiving a request for a change, the organization will invoke the Joint Standards Development Process and contact the other organization group to convene a meeting to address how the potential changes being requested might impact the two aspects of the standard - reliability and/or commercial. This process will allow the groups to work jointly on the request and ensure that both standards will stay in lock-step with each other.

1. TLR Level Process

The flowchart diagram depicted in figure below provides an overview of the TLR process and system conditions that would necessitate a Reliability Coordinator to request for interconnection-wide TLR procedure.



2. Requirements

Below are the requirements that are found in NERC IRO-006-4. They are reproduced here for ease of reference.

Requirement 1:

A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, with its authority and at its discretion, select one or more procedures to provide transmission loading relief. These procedures can be a "local" (regional, interregional, or sub-regional) transmission loading relief procedure or one of the following Interconnection-wide procedures:

[Violation Risk Factor: Medium]

[Time Horizon: Real-time Operations]

Requirement 1.1

The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection is provided in Attachment 1-IRO-006-4. The TLR procedure alone is an inappropriate and ineffective tool to mitigate an IROL violation. Other acceptable and more effective procedures to mitigate actual IROL violations include: reconfiguration, re-dispatch, or load shedding.

Requirement 1.2

The Interconnection-wide transmission loading relief procedure for use in the Western Interconnection is the "WSCC Unscheduled Flow Mitigation Plan," provided at: http://www.wecc.biz/documents/library/UFAS/UFAS_mitigation_plan_rev_20 01-clean_8-8-03.pdf.

Requirement 1.3

The Interconnection-wide transmission loading relief procedure for use in ERCOT is provided as Section 7 of the ERCOT Protocols, posted at: http://www.ercot.com/mktrules/protocols/current.html

Requirement 2

The Reliability Coordinator shall only use local transmission loading relief or congestion management procedures to which the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party.

[Violation Risk Factor: Low]

[Time Horizon: Operations Planning]

Requirement 3

A Reliability Coordinator may implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, each Reliability Coordinator shall follow the curtailments as directed by the Interconnection-wide procedure. A Reliability Coordinator desiring to use a local procedure as a substitute for curtailments as directed by the Interconnection-wide procedure shall obtain prior approval by the ERO.

[Violation Risk Factor: Low]

[Time Horizon: Operations Planning]

Requirement 4

When Interconnection-wide procedures are implemented to curtail Interchange Transactions that cross an Interconnection boundary, each Reliability Coordinator shall comply with the provisions of the Interconnection-wide procedure.

[Violation Risk Factor: Medium]

[Time Horizon: Real-time Operations]

Requirement 5

During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with applicable Interchange scheduling standards.

[Violation Risk Factor: Medium]

[Time Horizon: Real-time Operations]

3. Measures

Measure 1

Each Reliability Coordinator shall be capable of providing evidence (such as logs) that demonstrate when Eastern Interconnection, WECC, or ERCOT Interconnection-wide transmission loading relief procedures are implemented, the implementation follows the respective established procedure as specified in this standard (R1, R1.1, R1.2 and R1.3).

Measure 2

Each Reliability Coordinator shall be capable of providing evidence (such as written documentation) that the Transmission Operator experiencing the potential or existing SOL or IROL violations is a party to the local transmission loading relief or congestion management procedures when these procedures have been implemented (R2).

Measure 3

Each Reliability Coordinator shall be capable of providing evidence (such as NERC meeting minutes) that the local procedure has received prior approval by the ERO when such procedure is used as a substitute for curtailment as directed by the Interconnection-wide procedure (R3).

Measure 4

Each Reliability Coordinator shall be capable of providing evidence (such as logs) that the responding Reliability Coordinator complied with the provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator when requested to curtail an Interchange Transaction that crosses an Interconnection boundary (R4).

Measure 5

Each Reliability Coordinator and Balancing Authority shall be capable of providing evidence (such as Interchange Transaction Tags, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts) that they have complied with applicable Interchange scheduling standards INT-001, INT-003, and INT-004 during the implementation of relief procedures, up to the point emergency action is necessary (R5).

4. Compliance

4.1. Compliance Monitoring Process

4.1.1. Compliance Monitoring Responsibility:

4.1.2. Regional Entity

4.1.3. Compliance Monitoring Period and Reset Time Frame

- Compliance Monitoring Period: One calendar year.
- Reset Period: One month without a violation.

4.1.4. Data Retention

- The Reliability Coordinator shall maintain data for eighteen months for M1, M4, and M5.
- The Reliability Coordinator shall maintain data for the duration the Transmission Operator is party to the procedure in effect plus one calendar year thereafter for M2.
- The Reliability Coordinator shall maintain data for the approved duration of the procedure in effect plus one calendar year thereafter for M3.

4.1.5. Additional Compliance Information

Each Reliability Coordinator and Balancing Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

Each Reliability Coordinator and Balancing Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

- Operations logs, voice recordings or transcripts of voice recordings or other documentation providing the evidence of its compliance to all the requirements for all Interconnection-wide TLR procedures that it has implemented during the review period.
- TLR reports.

4.2. Violation Severity Level

4.2.1. Lower

- There shall be a lower violation severity level if any of the following conditions exist:
- For each TLR in the Eastern Interconnection, the Reliability Coordinator violates one (1) requirement of the applicable Interconnection-wide procedure (R1)

- The Reliability Coordinators or Balancing Authorities did not comply with applicable Interchange scheduling standards during the implementation of the relief procedures, up to the point emergency action is necessary (R5).

4.2.2. Moderate

- For each TLR in the Eastern Interconnection, the Reliability Coordinator violates two (2) to three (3) requirements of the applicable Interconnection-wide procedure (R1).

4.2.3. High

- There shall be a high violation severity level if any of the following conditions exist:
- For each TLR in the Eastern Interconnection, the applicable Reliability Coordinator violates four (4) to five (5) requirements of the applicable Interconnection-wide procedure (R1).
- When requested to curtail an Interchange Transaction that crosses an Interconnection boundary utilizing an Interconnection-wide procedure, the responding Reliability Coordinator did not comply with provisions of the Interconnection-wide procedure as requested by the initiating Reliability Coordinator (R4).

4.2.4. Severe

- There shall be a severe violation severity level if any of the following conditions exist:
- For each TLR in the Eastern Interconnection, the Reliability Coordinator violates six (6) or more of the requirements of the applicable Interconnection-wide procedure (R1).
- A Reliability Coordinator implemented local transmission loading relief or congestion management procedures to relieve congestion but the Transmission Operator experiencing the congestion was not a party to those procedures (R2).
- A Reliability Coordinator implemented local transmission loading relief or congestion management procedures as a substitute for curtailment as directed by the Interconnection-wide procedure but the local procedure had not received prior approval by the ERO (R3).
- While attempting to mitigate an existing IROL violation in the Eastern Interconnection, the Reliability Coordinator applied TLR as the sole remedy for an existing IROL violation.
- While attempting to mitigate an existing constraint in the Western Interconnection using the "WSCC Unscheduled Flow Mitigation Plan", the Reliability Coordinator did not follow the procedure correctly.

- While attempting to mitigate an existing constraint in ERCOT using Section 7 of the ERCOT Protocols, the Reliability Coordinator did not follow the procedure correctly.

5. Transmission Loading Relief (TLR) Procedures – Eastern Interconnection

Purpose

This section defines the procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator (IDC). The contents of this section are derived from the former Attachment 1 of IRO-006. The TLR process is defined in the requirements shown under Section 2 - Requirements, and is depicted in NERC Appendix A – Transaction Management and Curtailment Process. Examples of curtailment calculations using these procedures are contained in NAESB Appendix C – Transaction Curtailment Formula.

Applicability

This standard only applies to the Eastern Interconnection.

5.1. Transmission Loading Relief (TLR) Procedures

5.1.1. Initiation Only by Reliability Coordinator

A Reliability Coordinator shall be the only entity authorized to initiate the TLR Procedure and shall do so at 1) the Reliability Coordinator's own request, or 2) upon the request of a Transmission Operator.

5.1.1.1. Curtailment Threshold

The curtailment threshold to be utilized by the Reliability Coordinator for curtailments in the Eastern Interconnection is specified in *[**Section 3.10** of the NAESB Transmission Loading Relief Business Practice Standard — Curtailment Threshold]*.

3.10 *The Curtailment Threshold for the Eastern Interconnection shall be 0.05 (5%).*

5.1.2. Mitigating Transmission Constraints

A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or existing System Operating Limit (SOL) violations or to prevent Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC. However, the TLR procedure is an inappropriate and ineffective tool as a sole means to mitigate existing IROL violations. Effective alternatives to the use of the TLR procedure in situations involving an existing IROL violation include: reconfiguration, re-dispatch, and load shedding outside the TLR process.

5.1.2.1. Requesting Relief on Tie Facilities

Any Transmission Operator who operates the tie facility shall be allowed to request relief from its Reliability Coordinator.

5.1.2.1.1. Interchange Transaction Priorities on Tie Facilities

Interchange Transaction priority on tie facilities as used for curtailment purposes shall be determined by the Transmission Service reserved on the Transmission Service Provider's system who requested the relief in accordance with *[**Section 2.1**, and its sub-parts, of the NAESB Transmission Loading Relief Business Practice Standard - Priority of Interchange Transactions.]*

2.1 *The Reliability Coordinator shall recognize the Interchange Transaction priority determined by the Transmission Service reserved as follows:*

2.1.1 *Priority 0. Next-hour Market Service – NX (if offered by Transmission Service Provider)*

2.1.2 *Priority 1. Service over secondary receipt and delivery points – NS*

2.1.3 *Priority 2. Non-Firm Point-to-point Hourly Service – NH*

2.1.4 *Priority 3. Non-Firm Point-to-point Daily Service – ND*

2.1.5 *Priority 4. Non-Firm Point-to-point Weekly Service – NW*

2.1.6 *Priority 5. Non-Firm Point-to-point Monthly Service – NM*

2.1.7 *Priority 6. Network Integration Transmission Service from sources not designated as network resources – NN*

2.1.8 *Priority 7. Firm Point-to-point Transmission Service - (F) and Network Integration Transmission Service from Designated Resources – (FN)*

5.1.3. Order of TLR Levels and Taking Emergency Action

The Reliability Coordinator shall not be required to follow the TLR Levels [Shown in Procedures (Attachment 1) – NERC Section 2) in their numerical order. Furthermore, if a Reliability Coordinator deems that a transmission loading condition could jeopardize Bulk Electric System reliability, the Reliability Coordinator shall have the authority to enter TLR Level 6 directly, and immediately direct the Balancing Authorities or Transmission Operators to take such actions as re-dispatching generation, or reconfiguring transmission, or reducing load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedure or other methods to return the system to a secure state.

5.1.4. Notification of TLR Procedure Implementation

The Reliability Coordinator initiating the use of the TLR Procedure shall notify other Reliability Coordinators and Balancing Authorities and Transmission Operators, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

5.1.4.1. Notifying Other Reliability Coordinators

The Reliability Coordinator initiating the TLR Procedure shall inform all other Reliability Coordinators via the Reliability Coordinator Information System (RCIS) that the TLR Procedure has been implemented.

5.1.4.1.1. Actions Expected

The Reliability Coordinator initiating the TLR Procedure shall indicate the actions expected to be taken by other Reliability Coordinators.

5.1.4.2. Notifying Transmission Operators and Balancing Authorities

The Reliability Coordinator shall notify Transmission Operators and Balancing Authorities in its Reliability Area when entering and leaving any TLR level.

5.1.4.3. Notifying Balancing Authorities

The Reliability Coordinator for the sink Balancing Authority shall be responsible for directing the Sink Balancing Authority to curtail the Interchange Transactions as specified by the Reliability Coordinator implementing the TLR Procedure.

5.1.4.3.1. Notification Order

Within a Transmission Service Priority level, the Sink Balancing Authorities whose Interchange Transactions have the largest impact on the Constrained Facilities shall be notified first if practicable.

5.1.4.4. Updates

At least once each hour, or when conditions change, the Reliability Coordinator implementing the TLR Procedure shall update all other Reliability Coordinators (via the RCIS). Transmission Operators and Balancing Authorities who have had Interchange Transactions impacted by the TLR will be updated by their Reliability Coordinator.

5.1.5. Obligations

All Reliability Coordinators shall comply with the request of the Reliability Coordinator who initiated the TLR Procedure, unless the initiating Reliability Coordinator agrees otherwise.

5.1.5.1. Use of TLR Procedure with "Local" Procedures

[Sections 1.1, 1.2, and 1.2.1 of the NAESB Transmission Loading Relief Business Practice Standard] shall apply in the use of TLR Procedure with "local" procedures.

1.1 Use of Interconnection-wide TLR procedures. *All Reliability Coordinators shall be obligated to follow the transmission loading relief procedures associated with the appropriate Interconnection-wide TLR procedure for their Interconnection.*

1.2 Use of local procedures. *A Reliability Coordinator shall be allowed to implement a local transmission loading relief or congestion management procedure simultaneously with the Interconnection-wide TLR procedure.*

1.2.1 *The Reliability Coordinator shall revert back to the Interconnection-wide TLR procedure in the event local procedures do not adequately alleviate the Interconnection Reliability Operating Limits (IROL) or System Operating Limits (SOL) violation.*

5.1.5.2. Commercial Notifications

Commercial notifications shall be implemented in accordance with *[Section 1.5 of the NAESB Transmission Loading Relief Business Practice Standard]*

1.5 *The Reliability Coordinator shall simultaneously notify all parties affected by the invocation of a local congestion management procedure or the Interconnection-wide TLR procedure, using the notification method as specified by NERC (e.g. – the Reliability Coordinator Information System or successor).*

5.1.6. Consideration of Interchange Transactions

The administration of the TLR Procedure shall be guided by information obtained from the IDC.

5.1.6.1. Interchange Transactions Not in the IDC

Reliability Coordinators shall also treat known Interchange Transactions that may not appear in the IDC in accordance with the procedures in this document.

5.1.6.2. Transmission Elements Not in the IDC

When a Reliability Coordinator is faced with an overload on a transmission element that is not modeled in the IDC, the Reliability Coordinator shall use the best information available to curtail Interchange Transactions in order to operate the system in a reliable manner. The Reliability Coordinator shall use its best efforts to ensure that Interchange Transactions with a Transfer Distribution Factor of less than the Curtailment Threshold on the transmission element not modeled in the IDC are not curtailed.

5.1.6.3. Questionable IDC Results

Any Reliability Coordinator (or Transmission Operator through its Reliability Coordinator) who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use its best efforts to communicate those adjustments necessary to bring the curtailment list into conformance with the principles of this Procedure to the initiating Reliability Coordinator. Causes of questionable IDC results may include:

- Missing Interchange Transactions that are known to contribute to the Constraint.
- Significant change in transmission system topology.
- TDF matrix error.

Impacts of questionable IDC results may include:

- Curtailment that would have no effect on, or aggravate the constraint.
- Curtailment that would initiate a constraint elsewhere.

If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the curtailment list is made.

5.1.6.4. Curtailments That Would Cause a Constraint Elsewhere

A Reliability Coordinator shall be allowed to exempt an Interchange Transaction from Curtailment if that Reliability Coordinator is aware that the Interchange Transaction Curtailment directed by the IDC would cause a constraint to occur elsewhere. This exemption shall only be allowed after the Reliability Coordinator has consulted with the Reliability Coordinator who initiated the Curtailment.

5.1.6.5. Re-Dispatch Options

Re-Dispatch Options are implemented according to *[Sections 1.3, 1.3.1, 1.3.1.1 and 1.3.2 of the NAESB Transmission Loading Relief Business Practice Standard]*

***1.3 Market-based congestion management or re-dispatch procedures**. Regulatory-approved market-based congestion management or re-dispatch procedures shall be allowed as a supplement to, or substitute for, the Interconnection-wide TLR procedure.*

***1.3.1** The Reliability Coordinator shall ensure that transactions associated with Point-to-point Transmission Service, Network Integration Transmission Service, and Transmission Service associated with Native Load, having been identified as linked with a Regulatory-approved Market-based congestion management procedure, are protected from curtailment to the extent that the Regulatory-approved Market-based congestion management procedure allows.*

***1.3.1.1** The Interchange Transaction shall retain its original transmission service priority for purposes of curtailment when the transmission service is not reserved on the Constrained Facility or Flowgate.*

***1.3.2** The Reliability Coordinator shall revert back to the Interconnection-wide TLR procedure in the event Market-based procedures do not adequately alleviate the IROL or SOL violations.*

5.1.6.6. Reallocation

The Reliability Coordinator shall consider for Reallocation any Transactions of higher priority that meet the approved tag submission deadline during a TLR Level 3A. The Reliability Coordinator shall consider for Reallocation any Transaction using Firm Transmission Service that has met the approved tag submission deadline during a TLR Level 5A. Note Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the transmission service is considered firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules, in accordance with the current version of INT-004, will not be held under TLR level 4 or lower.

Reallocation is implemented according to ***Sections 3.3, 3.3.1, 3.3.1.2 and 3.6** of the NAESB Transmission Loading Relief Business Practice Standard* and is described in the individual TLR level descriptions beginning with Section 5.2 of this Reference Manual.

Reallocation is implemented *for Dynamic Schedules for Levels 4 and Lower* in accordance with *[Sections 3.2.5, 3.3.1.2, 3.4.1.2 and 3.5.2.1 of the NAESB Transmission Loading Relief Business Practice Standard]*

5.1.6.7. Parallel Flow Calculation Procedure for Reallocation of Curtailing Firm Transmission Service

The Reliability Coordinator shall use the Per Generator Method to calculate parallel flows when reallocating interchange Transactions as described in *[**Sections 3.11 through 3.11.2.8** of the NAESB Transmission Loading Relief Business Practice Standard]*

3.11 The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm transmission services (i.e. PTP, NI, and service to NL) that contribute to the flow on any Constrained Facility or Flowgate by an amount greater than or equal to the Curtailment Threshold on a pro rata basis.

3.11.1 The Reliability Coordinator shall use Transfer Distribution Factors (TDF's) to calculate the portion of parallel flows on any Constrained Facility or Flowgate due to Interchange Transactions using Firm Transmission Service.

3.11.1.1 Only those Interchange Transactions with TDF's greater than or equal to the Curtailment Threshold shall be considered.

3.11.2 The Reliability Coordinator shall use the Per Generator Method to calculate the portion of parallel flows on any Constrained Facility or Flowgates due to Network Integrated (NI) transmission service customers and service to Native Load (NL) customers for each Balancing Authority (See NAESB Appendix B for examples).

3.11.2.1 The Reliability Coordinator shall assign the amount of Constrained Facility or Flowgate relief that must be achieved by each NI transmission service or NL customers within a given Balancing Authority.

3.11.2.1.1 For each NI transmission service or NL customer, the Reliability Coordinator shall determine the amount of flow contributing to the Constrained Facility or Flowgate from those generators assigned to that customer using Generator-to-Load Distribution Factors (GLDFs) for those generators.

3.11.2.1.2 The GLDF for each generator shall determine the impact that generator has on the Constrained Facility or Flowgate.

3.11.2.1.3 The sum of the contributions to the Constrained Facility or Flowgate from all generators assigned to the NI transmission service or NL customer shall be the amount of relief assigned to that customer.

3.11.2.1.4 The Reliability Coordinator shall not specify how the reduction will be achieved.

3.11.2.2 GLDFs shall be calculated for each NI transmission service and NL customer as the Generation Shift Factors (GSFs) of the NI transmission service or NL customer's assigned generation minus its Load Shift Factors (LSFs).

3.11.2.2.1 GSFs shall be calculated from a single bus in the study case.

3.11.2.2.2 LSFs shall be calculated by scaling load.

3.11.2.2.3 The GLDFs must be greater than or equal to the Curtailment Threshold to be considered.

3.11.2.2.4 GLDFs whose contributions are counter to the constraint (i.e. counter flow) shall be ignored for the purposes of the calculation.

3.11.2.3 Each generator shall be assigned to a given NI transmission service or NL customer within a Balancing Authority Area for the purposes of calculating their contribution to a given constraint. Exceptions may include special cases where generators are only included for case modeling purposes.

3.11.2.4 For a given generator bus, all generators modeled at that bus shall be assumed online and operating at their maximum MVA value except as noted otherwise in this procedure.

3.11.2.4.1 At the time of calculation, daily operating reliability information will be used to update the calculation for transmission line outages, generator outage or derate information, and daily load forecasts as appropriate.

3.11.2.4.2 Only those generator buses whose aggregate modeled capacity exceeds 20MW shall be considered. Generator buses whose aggregate modeled capacity does not exceed 20MW shall be excluded.

3.11.2.5 Generators shall be assigned to a given NI transmission service or NL customer based upon the customer's controlling interest in the facility and may include partial facilities or facilities from Balancing Authority Areas external to the customer's host Balancing Authority.

3.11.2.6 If the total amount of generation from the generation facilities assigned to a given NI transmission service or NL customer exceed the total load for that customer, the generation shall be scaled down to match that customer's total load.

3.11.2.7 If the total amount of generation from the generation facilities assigned to a given NI transmission service or NL customer is less than the total load for that customer, it shall be assumed that the imports necessary to meet total load are being scheduled on Point-to-point Transmission Service. Generation shall not be scaled to meet load in this instance.

3.11.2.8 All NI transmission service and NL customers in the Eastern Interconnection, working with their respective Balancing Authorities, shall be obligated to achieve the amount of relief assigned to them by the Reliability Coordinator via the Per Generator Method.

5.1.7. IDC Updates

Any Interchange Transaction adjustments or curtailments that result from using this Procedure must be entered into the IDC.

5.1.8. Logging

The Reliability Coordinator shall complete the NERC Transmission Loading Relief Procedure Log (automatically performed by the IDC) whenever it invokes TLR Level 2 or above, and send a copy of the log via email to NERC (automatically performed by the IDC) within two business days of the TLR event for posting on the NERC website.

5.1.8.1. Access to Procedure Logs

Access to procedure logs shall be implemented according to *[Section 1.6 of the NAESB Transmission Loading Relief Business Practice Standard]*

1.6 *The Reliability Coordinator shall ensure that NERC TLR logs specifying the details associated with the initiation of TLR level 2 or higher and/or the invocation of the Interconnection-wide TLR procedure are available, subject to applicable confidentiality*

requirements, to all market participants, regardless of the procedure used to achieve that relief.

5.1.9. TLR Event Review

The Reliability Coordinator shall report the TLR event to the NERC Market Committee and Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required. [Note: References to the NERC Market Committee (only) will be removed as the Market Committee no longer exists]

What do we do with Market Committee reference?

5.1.9.1. Providing Information

Transmission Operators and Balancing Authorities within the Reliability Coordinator's Area, and all other Reliability Coordinators, including Transmission Operators and Balancing Authorities within their respective Reliability Areas, shall provide information, as requested by the initiating Reliability Coordinator, in accordance with TLR review processes established by NERC.

5.1.9.2. Market Committee Reviews

What do we do with Market Committee reference?

The Market Committee may conduct reviews of certain TLR events based on the size and number of Interchange Transactions that are affected, the frequency that the TLR Procedure is called for a particular Constrained Facility, or other factors. [Note: References to the NERC Market Committee (only) will be removed as the Market Committee no longer exists]

5.1.9.3. Operating Reliability Subcommittee Reviews

The Operating Reliability Subcommittee shall conduct reviews to ensure proper implementation and for "lessons learned."

5.1.10. Interchange Transaction Priority when Transmission Service is Reserved on the Constrained Facility(ies) or Flowgate(s)

Interchange Transaction priority when Transmission Service IS reserved on the Constrained Facility(ies) or Flowgate(s) shall be implemented according to ***[Sections 2.2, 2.2.1, 2.2.1.1, 2.2.1.2** of the NAESB Transmission Loading Relief Business Practice Standard]*. For specific examples of On Path/Off Path Mitigation please see NAESB Appendix A – Mitigating Constraints On and Off the Contract Path during TLR.

2.2 Interchange Transaction priority when Transmission Service is reserved on the Constrained Facility(ies) or Flowgate(s). *The Reliability Coordinator shall use the following procedure to establish the priority of an Interchange Transaction when Transmission Service is reserved on a Contract Path that includes the Constrained Facility(ies) or Flowgate(s): (See NAESB Appendix A for examples)*

2.2.1 *The Reliability Coordinator shall assign priority to the Interchange Transaction based upon the Transmission Service priority of the Transmission Service link with the Constrained Facility or Flowgate regardless of the Transmission Service priority on the other links along the Contract Path.*

2.2.1.1 *The Reliability Coordinator shall consider the entire Interchange Transaction Non-Firm if the transmission link (i.e. a segment on the Contract Path) on the Constrained Facility or Flowgate is Non-Firm Transmission Service, even if other links in the Contract Path are Firm.*

2.2.1.2. *The Reliability Coordinator shall consider the entire Interchange Transaction Firm if the transmission link on the Constrained Facility or Flowgate is Firm Transmission Service, even if other links in the Contract Path are Non-Firm.*

5.1.11. Interchange Transaction Priority when Transmission Service is NOT Reserved on the Constrained Facility(ies) or Flowgate(s)

Interchange Transaction priority when Transmission Service IS NOT reserved on the Constrained Facility(ies) or Flowgate(s) shall be implemented according to ***[Sections 2.3, 2.3.1, 2.3.1.1, 2.3.1.2*** *of the NAESB Transmission Loading Relief Business Practice Standard]*. For specific examples of On Path / Off Path Mitigation please see NAESB Appendix A–- Mitigating Constraints On and Off the Contract Path during TLR.

2.3 Interchange Transaction priority when Transmission Service is not reserved on the Constrained Facility(ies) or Flowgate(s). *The Reliability Coordinator shall use the following procedure to establish the priority of an Interchange Transaction when Transmission Service is reserved on a Contract Path that does not include the Constrained Facility or Flowgate: (See NAESB Appendix A for examples)*

2.3.1 *The Reliability Coordinator shall assign priority to the Interchange Transaction based upon the lowest Transmission Service priority of all Transmission Service links along the Contract Path.*

2.3.1.1 *The Reliability Coordinator shall consider the entire Interchange Transaction Non-Firm if any of the transmission links on the Contract Path are Non-Firm Transmission Service.*

5.1.11.1. *2.3.1.2* ***The Reliability Coordinator shall consider the entire Interchange Transaction Firm if all of the transmission links on the Contract Path are Firm Transmission Service, even if none of the transmission links are on the Constrained Facility or Flowgate, and shall not be curtailed to relieve a Constraint off the Contract Path until all Non-Firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed.***

5.1.12. Sub-Priorities During Reallocation

Sub-priorities during Reallocation shall be implemented according to ***[Sections 2.4, 2.4.1, 2.4.2, 2.4.3 and 2.4.4*** *of the NAESB Transmission Loading Relief Business Practice Standard – Sub-priorities during Reallocation]*. Please see additional descriptions located under TLR Level 3A for greater detail on Sub-Priorities.

2.4 Sub-priorities during Reallocation. *During Reallocation, the Reliability Coordinator shall utilize the following sub-priorities as established in the IDC, listed from highest priority to lowest priority, within each Non-Firm Transmission Service priority for determining how pending Interchange Transactions with equal or higher priority Transmission Service shall be loaded:*

***2.4.1 Sub-priority S1**. Sub-priority S1 shall be assigned to that portion of an Interchange Transaction that is already flowing.*

***2.4.2 Sub-priority S2.** Sub-priority S2 shall be assigned to that portion of an Interchange Transaction that has been curtailed or held by the Interconnection-wide TLR procedure.*

***2.4.3 Sub-priority S3.** Sub-priority S3 shall be assigned to that incremental portion of an already flowing Interchange Transaction that is scheduled to increase from its current hour schedule in the upcoming hour in accordance with its energy profile, or schedules submitted prior to the implementation of the Interconnection-wide TLR procedure.*

***2.4.4 Sub-priority S4**. Sub-priority S4 shall be assigned to a new or revised Interchange Transaction that is submitted after the Interconnection-wide TLR procedure has been declared.*

5.2. Transmission Loading Relief (TLR) Levels

This section describes the various levels of the TLR Procedure. The description of each level begins with the circumstances that define the TLR Level, followed by the procedures to be followed. The decision that a Reliability Coordinator makes in selecting a particular TLR Level often depends on the transmission loading condition and whether the Interchange Transaction is using Non-firm Point-to- Point Transmission Service or Firm Point-to-Point Transmission Service. There are further considerations that depend on whether the Constrained Facility is on or off the Contract Path. It is important to note that an Interchange Transaction using Firm Point-to-Point Transmission Service on all Contract Path links is considered a "firm" Interchange Transaction even if the Constrained Facility is off the Contract Path.

5.2.1. TLR Level 1 – Notify Reliability Coordinators of Potential SOL or IROL Violations

5.2.1.1. Conditions

The Reliability Coordinator shall use the following circumstances to establish the need for TLR Level 1:

- The transmission system is secure.
- The Reliability Coordinator foresees a transmission or generation contingency or other operating problem within its Reliability Area that could cause one or more transmission facilities to a**pproach or exceed their SOL or IROL.**

5.2.1.2. Notification Procedures

The Reliability Coordinator shall notify all Reliability Coordinators via the Reliability Coordinator Information System (RCIS) as soon as the condition is foreseen. All affected Reliability Coordinators shall check to ensure that Interchange Transactions are posted in the IDC.

5.2.1.3. Treatment of Interchange Transactions During TLR Level 1

The treatment of Interchange Transactions during TLR Level 1 is prescribed by *[Section 3.1 of the NAESB Transmission Loading Relief Business Practice Standard – Eastern Interconnection Procedure for Physical Curtailment of Interchange Transactions]*

3.1 *When a Reliability Coordinator has initiated a TLR level 1 (Notify all Reliability Coordinators of potential SOL or IROL Violations), the Reliability Coordinator shall take no action against any Interchange Transaction.*

5.2.2. TLR Level 2 – Hold Transfers at Present Level to Prevent SOL or IROL Violations

5.2.2.1. Conditions

The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 2:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.

5.2.2.2. Holding Procedures

Holding procedures shall be implemented during TLR Level 2 according to *[**Sections 3.2.2, 3.2.3, 3.2.4 and 3.2.5** of the NAESB Transmission Loading Relief Business Practice Standard.]*

3.2.2 *The Reliability Coordinator shall hold the implementation of any additional Interchange Transactions using Non-Firm Transmission Service that are at or above the Curtailment Threshold.*

3.2.3 *The Reliability Coordinator shall allow additional Interchange Transactions that flow across the Constrained Facility or Flowgate to be initiated if their flow reduces the loading on the Constrained Facility or Flowgate or has a Transfer Distribution Factor (TDF) less than the Curtailment Threshold.*

3.2.4 *The Reliability Coordinator shall allow all Interchange Transactions using Firm Transmission Service to be initiated.*

3.2.5 *If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with NERC INT-004 R5 will not be held under TLR level 4 or lower.*

5.2.2.3. Actions

When a Reliability Coordinator has initiated a TLR level 2 (Hold transfers at present level to prevent SOL or IROL Violations), the Reliability Coordinator shall ensure the following actions as prescribed in [Sections 3.2.1, 3.2.1.1, and 3.2.1.2 of the NAESB Transmission Loading Relief Business Practice Standard.]

3.2.1 *The Reliability Coordinator should ensure that TLR level 2 is a transient state so that Interchange Transactions are properly initiated according to their transmission reservation priority.*

3.2.1.1 *The Reliability Coordinator should make best efforts possible to ensure that TLR level 2 does not exceed 30 minutes in duration.*

3.2.1.2 *If TLR level 2 exceeds 30 minutes in duration, the Reliability Coordinator shall document this action on the NERC TLR log.*

5.2.3. TLR Level 3A – Reallocation of Transmission Service by Curtailing Interchange Transactions Using Non-Firm Point-to-Point Transmission Service to Allow Interchange Transactions Using Higher Priority Transmission Service

5.2.3.1. Conditions

The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3A:

- The transmission system is secure.
- One or more transmission facilities are expected to approach, or are approaching, or are at their SOL or IROL.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.
- The Transmission Provider has previously approved a higher priority Point-to- Point Transmission Service reservation over which a Transmission Customer wishes to begin an Interchange Transaction.

5.2.3.2. Actions

TLR Level 3A accomplishes Reallocation by curtailing Interchange Transactions using Non-firm Point-to-Point Transmission Service to allow Interchange Transactions using higher priority Non-firm or Firm Point-to-Point Transmission Service to start. When a TLR Level 3A is in effect, Reliability Coordinators shall reallocate Interchange Transactions according to the Transmission Service Priorities of the relevant Interchange Transactions. Reallocation also includes the orderly reloading of Transactions by priority when conditions permit curtailed Transactions to be reinstated. ***[Section 3.3.2.2*** *of the NAESB Transmission Loading Relief Business Practice Standard]* states that *"The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called."*

Reallocation of Interchange Transactions shall take place according to ***[Sections 3.3 – 3.3.1.2*** *of the NAESB Transmission Loading Relief Business Practice Standard]*, as described below

3.3 TLR level 3A. *When a Reliability Coordinator has initiated a TLR level 3A (Reallocation of Transmission Service by curtailing Interchange Transactions using Non-Firm Transmission Service to allow Interchange Transactions using higher priority Transmission Service to start), the Reliability Coordinator shall take the following actions:*

3.3.1 *The Reliability Coordinator shall allow those Interchange Transactions using Firm Transmission Service that have been submitted prior to the NERC-approved tag submission deadline for Reallocation (as found in* NERC IRO-006-1, effective date August 8, 2005*) to be initiated as scheduled.*

3.3.1.1 *The Reliability Coordinator shall hold an Interchange Transaction using Firm Transmission Service if the Interchange Transaction is submitted after the*

NERC-approved tag submission deadline for Reallocation during TLR level 3A, but shall allow the transaction to start in the following hour.

3.3.1.2 *Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with* NERC INT-004 R5 *will not be held under TLR level 4 or lower.*

NAESB Business Practice Standards found within NERC Sections 2.3.2.1, 2.3.2.2, 2.3.2.3, 2.3.2.4, 2.3.2.5, and 2.3.2.6 shall apply to TLR Level 3A.

[Sections 3.3.2 and 3.3.2.3 *of the NAESB Transmission Loading Relief Business Practice Standard]*

3.3.2 *The Reliability Coordinator with the constraint shall consider for curtailment those Interchange Transactions using lower priority Non-Firm Transmission Service as specified in Requirement 2, "Interchange Transaction Priorities for use with Interconnection-wide TLR procedures" to allow higher priority Transmission Service schedules to start.*

3.3.2.3 *The Reliability Coordinator shall displace Interchange Transactions utilizing lower priority Transmission Service with Interchange Transactions utilizing higher priority Non-Firm or Firm Transmission Service.*

*[**Section 3.3.2.4** of the NAESB Transmission Loading Relief Business Practice Standard]*

3.3.2.4 *The Reliability Coordinator shall not curtail Interchange Transactions using Non-Firm Transmission Service to allow the initiation or increase of another transaction having the same Non-Firm Transmission Service priority.*

*[**Section 3.3.2.5** of the NAESB Transmission Loading Relief Business Practice Standard]*

3.3.2.5 *If all Interchange Transactions using Non-Firm Transmission Service have been curtailed and there are additional requests to allow Interchange Transactions using Firm Transmission Service to begin that cannot be accommodated without violating an SOL/IROL, the Reliability Coordinator shall initiate TLR level 4 or level 5A, as appropriate.*

[Sections 3.3.2.6 *of the NAESB Transmission Loading Relief Business Practice Standard]*

3.3.2.6 *The Reliability Coordinator shall reload curtailed Interchange Transactions prior to starting new or increasing existing Interchange Transactions.*

*[**Sections 3.3.2.6.1** of the NAESB Transmission Loading Relief Business Practice Standard]*

3.3.2.6.1 *Interchange Transactions that were submitted prior to the initiation of the Interconnection-wide TLR procedure but were subsequently held from starting because they failed to meet the NERC-approved tag submission deadline for Reallocation during TLR level 3A or were held over from a TLR level 2, shall be considered to have been curtailed and thus would be eligible for reload at the same time as the curtailed Interchange Transaction.*

*[**Sections 3.3.3** and **3.3.3.1** of the NAESB Transmission Loading Relief Business Practice Standard]*

3.3.3 *The Reliability Coordinator shall consider for Reallocation and/or reload Interchange Transactions that have been held or curtailed as prescribed in this business practice standard according to their Transmission Service priorities when operating conditions permit.*

3.3.3.1 *The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions using the Sub-priorities assigned in Requirements 2.4.1 through 2.4.4. In case all of the transactions in a sub-priority cannot be reloaded, the transactions in that sub-priority shall be loaded based on a pro rata basis by allocating the remaining available transmission capability in proportion to the scheduled amount.*

*[**Sections 3.3.2.1** and **3.3.2.1.1** of the NAESB Transmission Loading Relief Business Practice Standard]*

3.3.2.1 *The Reliability Coordinator shall consider only those Interchange Transactions that have been submitted prior to the NERC-approved tag submission deadline for Reallocation during TLR level 3A for the upcoming hour.*

3.3.2.1.1 *Interchange Transactions submitted after this deadline shall be considered for Reallocation for the following hour. This applies to Interchange Transactions using either Non-firm Transmission Service or Firm Transmission Service. If an Interchange Transaction using Firm Transmission Service is submitted after the NERC-approved tag submission deadline and after the TLR is declared, that Transaction shall be held and then allowed to start in the upcoming hour.*

Sub-Priority Consideration in TLR 3A shall be implemented as described in *[**Sections 3.3.5, 3.3.5.1, 3.3.5.2, 3.3.5.3** and **3.3.5.4** of the NAESB Transmission Loading Relief Business Practice Standard]* and depicted in the Sub-Priority Table that follows.

3.3.5 *In considering transactions using Non-Firm Transmission Service for curtailment and/or Reallocation, the Reliability Coordinator shall consider transaction sub-priorities as follows:*

3.3.5.1 *Interchange Transactions with sub-priority S1 shall be allowed to continue flowing at the lesser of its current hour MW level or the MW level specified in the schedule for the upcoming hour. For calculated values less than zero, zero shall be used.*

3.3.5.2 *Interchange Transactions with sub-priority S2 shall be allowed to reload to the lesser of its current hour MW level or the MW level specified in the schedule for the upcoming hour. For calculated values less than zero, zero shall be used.*

3.3.5.3 *Interchange Transactions with sub-priority S3 shall be allowed to increase from its current hour MW level to the MW level specified in its schedule for the upcoming hour. For calculated values less than zero, zero shall be used.*

3.3.5.4 *Interchange Transactions with sub-priority S4 shall be allowed to start once all other Interchange Transactions with the same Transmission Service priority submitted prior to the initiation of the Interconnection-wide TLR procedure have been (re-)loaded.*

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the *lesser* of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC *after* the first TLR Action of the TLR Event had been declared.)	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used~~is the~~ in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

5.2.4. TLR Level 3B – Curtail Interchange Transactions Using Non-Firm Transmission Service Arrangement to Mitigate SOL or IROL Violation

5.2.4.1. Conditions

The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 3B:

- One or more transmission facilities are operating above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- Transactions using Non-firm Point-to-Point Transmission Service are flowing that are at or above the Curtailment Threshold on those facilities.

5.2.4.2. Curtailment Procedure to Mitigate an SOL or IROL

[*The Introduction to Section 3.4 of the NAESB Transmission Loading Relief Business Practice Standard] states, "When a Reliability Coordinator has initiated a TLR level 3B (curtail Interchange Transactions using Non-Firm Transmission Service arrangements to mitigate a SOL or IROL violation), the Reliability Coordinator shall take the following actions"* according to ***[Sections 3.4.1, 3.4.1.1, 3.4.1.2, 3.4.2, 3.4.3 and 3.4.4*** *of the NAESB Transmission Loading Relief Business Practice Standard.]*

3.4.1 *The Reliability Coordinator shall allow Interchange Transactions using Firm Transmission Service to start if they are submitted prior to the NERC-approved tag submission deadline during TLR level 3B.*

3.4.1.1 *The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.*

3.4.1.2 *Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with* NERC INT-004 R5 *will not be held under TLR level 4 or lower.*

3.4.2 *To mitigate a SOL or IROL in the current hour, the Reliability Coordinator shall curtail Interchange Transactions using Non-Firm Transmission Service that are at or above the Curtailment Threshold as defined in Section 3.10 and use the Interchange Transaction priorities as specified in Requirement 2 "Interchange Transaction Priorities for use with Interconnection-wide TLR procedures."*

3.4.3 *To continue mitigation of the SOL or IROL for the beginning of the next hour, the Reliability Coordinator shall curtail additional Interchange Transactions using Non-Firm Transmission Service to provide transmission capacity for Interchange Transactions using Firm Transmission Service or Interchange Transaction using higher priority Non-Firm Transmission Service utilizing the Reallocation procedures as specified in Requirement 3.3.*

3.4.4 *If all Interchange Transactions using Non-Firm Transmission Service have been curtailed and there are additional requests to allow Interchange Transactions using Firm Transmission Service to begin that cannot be accommodated without violating an SOL/IROL, the Reliability Coordinator shall initiate TLR level 4, level 5A, or level 5B as appropriate.*

5.2.4.3. Interchange Transaction Curtailments During TLR 3B

TLR Level 3B curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold in the current hour while Reallocating to a determined flow for the top of the next hour.

5.2.4.3.1. The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission Service in accordance with Section 6 of this document for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:

5.2.4.3.1.1 If issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief

5.2.4.3.1.1.1. At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour

5.2.4.3.1.1.2. If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.

5.2.4.3.1.1.3. Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation (see Section 7 – IDC Reference Document).

5.2.5. TLR Level 4 – Reconfigure Transmission

5.2.5.1. Conditions

The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 4:

- One or more Transmission Facilities are above their SOL or IROL, or
- Such operation is imminent and it is expected that facilities will exceed their reliability limit unless corrective action is taken.

5.2.5.2. Holding New Interchange Transactions

The holding of new Interchange Transactions shall be performed as described in *[**Sections 3.5, 3.5.1, 3.5.2 and 3.5.2.1** of the NAESB Transmission Loading Relief Business Practice Standard.]*

***3.5** When a Reliability Coordinator has initiated a TLR level 4 (Reconfigure Transmission), the Reliability Coordinator shall take the following actions:*

***3.5.1** The Reliability Coordinator shall hold (not implement) all new Interchange Transactions using Non-Firm Transmission Service that are at or above the Curtailment Threshold.*

***3.5.2** The Reliability Coordinator shall allow Interchange Transactions using Firm Transmission Service to start if they are submitted prior to the NERC-approved tag submission deadline during TLR level 3B.*

***3.5.2.1** If an Interchange Transaction is identified as a Dynamic Schedule and the Transmission Service is considered Firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with NERC INT-004 R5 will not be held under TLR level 4 or lower.*

5.2.5.3. Reconfiguration Procedures

The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in NAESB Appendix A - Mitigating Constraints On and Off the Contract Path during TLR.

5.2.6. TLR Level 5A – Reallocation of Transmission Service by Curtailing Interchange Transactions Using Firm Point-to-Point Transmission Service on a Pro-Rata Basis to Allow Additional Interchange Transactions Using Firm Point-to-Point Transmission Service

5.2.6.1. Conditions

The Reliability Coordinator shall use the following circumstances to establish the need for entering TLR Level 5A:

- The transmission system is secure.
- One or more transmission facilities are at their SOL or IROL.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- The Transmission Provider has been requested to begin an Interchange Transaction using previously arranged Firm Transmission Service that would result in a SOL or IROL violation.
- No further transmission reconfiguration is possible or effective.

5.2.6.2. Reallocation Procedures to Allow New Interchange Transactions Using Firm Point-to-Point Transmission to Start

Reallocation Procedures (a 3-Step Process) to allow new Interchange Transactions using Firm Point-to-Point Transmission to Start shall be implemented according to *[**Sections 3.6, 3.6.1 and 3.6.2** of the NAESB Transmission Loading Relief Business Practice Standard]*.

***3.6.1** and **3.6.2** of the NAESB Transmission Loading Relief Business Practice Standard]*.

***3.6 TLR level 5A.** When a Reliability Coordinator has initiated a TLR level 5A, the Reliability Coordinator shall allow additional Interchange Transactions using Firm Transmission Service to be implemented after all Interchange Transactions using Non-Firm Transmission Service have been curtailed. The Reliability Coordinator shall reallocate Transmission Service by curtailing on a pro rata basis Interchange Transactions using Firm Transmission Service to allow additional Interchange Transactions using Firm Transmission Service to start on a pro rata basis. These actions shall be taken in accordance with the NERC-approved tag submission deadline for Reallocation. The Reliability Coordinator shall hold an Interchange Transaction using Firm Transmission Service if the Interchange Transaction is submitted after the NERC-approved tag submission deadline for Reallocation during TLR level 5A, but shall allow the transaction to start in the following hour.*

3.6.1 *The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.*

3.6.2 *The Reliability Coordinator shall use the following process for reallocation of Interchange Transactions using Firm Transmission Service:*

5.2.6.2.1. Step 1

(*Sections 3.6.2.1 and 3.6.2.1.1 of NAESB Transmission Loading Relief Business Practice*)

3.6.2.1 *The Reliability Coordinator shall assist the Transmission Operator(s) in identifying known re-dispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities or Flowgates.*

3.6.2.1.1 *If such re-dispatch options are deemed insufficient to mitigate loading on the Constrained Facilities or Flowgates, the Reliability Coordinator shall continue to implement these re-dispatch options while simultaneously implementing other actions as described in this requirement.*

5.2.6.2.2. Step 2

(*Section 3.6.2.2 of NAESB Transmission Loading Relief Business Practice*)

3.6.2.2 *The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility or Flowgate caused by Interchange Transactions utilizing Firm Transmission Service that are at or above the Curtailment Threshold and the Transmission Provider's Native Load and untagged Network Integration Transmission Service, as required by the Transmission Provider's filed tariff and as described in NAESB Requirement 3.11, "Parallel flow calculation procedure for reallocating or curtailing Firm Transmission Service."* [Found in this Document in NERC Section 5.1.6.7]

5.2.6.2.3. Step 3

(*Sections 3.6.2.3, 3.6.2.3.1, and 3.6.2.3.2 of NAESB Transmission Loading Relief Business Practice*)

3.6.2.3 *The Reliability Coordinator shall curtail or reallocate Interchange Transactions utilizing Firm Transmission Service and ask for relief from the Transmission Provider's Native Load and untagged Network Integration Transmission Service as identified in requirement 3.6.2.2 to allow the start of additional Interchange Transactions utilizing Firm Transmission Service provided those transactions were submitted in accordance to the NERC-approved tag submission deadline for Reallocation during TLR level 5A.*

3.6.2.3.1 *The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Network Integration Transmission Service customers and Native Load if such curtailments are required by the Transmission Provider's tariff.*

3.6.2.3.2 *The Reliability Coordinator will assist the Transmission Provider to ensure that available re-dispatch options will continue to be implemented.*

5.2.6.3. Actions

The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

5.2.6.3.1. TLR Level 5A

Enable additional Interchange Transactions using Firm Point-to-Point Transmission Service to be implemented after all Interchange Transactions using Non-firm Point-to-Point Service have been curtailed

5.2.7. TLR Level 5B — Curtail Interchange Transactions Using Firm Point-to-Point Transmission Service (a 3-Step Process) to Mitigate a SOL or IROL Violation

5.2.7.1. Conditions

The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 5B:

- One or more Transmission Facilities are operating above their SOL or IROL, or
- Such operation is imminent, or
- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.
- All Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold have been curtailed.
- No further transmission reconfiguration is possible or effective.

5.2.7.2. Process

*[**Sections 3.7 and 3.7.1** of NAESB Transmission Loading Relief Business Practice]*

3.7 TLR level 5B. *When a Reliability Coordinator has initiated a TLR level 5B (curtail Interchange Transactions using Firm Transmission Service to mitigate a SOL or IROL violation), the Reliability Coordinator shall take the following actions:*

3.7.1 *The Reliability Coordinator shall use the following process for curtailment of Interchange Transactions using Firm Transmission Service:*

5.2.7.2.1. Step 1

(Sections 3.7.1.1 and 3.7.1.1.1 of the NAESB Transmission Loading Relief Business Practice Standard)

3.7.1.1 *The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known re-dispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities or Flowgates.*

3.7.1.1.1 *If such re-dispatch options are deemed insufficient to mitigate loading on the Constrained Facilities or Flowgates, the Reliability Coordinator shall continue*

to implement these re-dispatch options while simultaneously implementing other actions as described in this requirement.

5.2.7.2.2. Step 2

(Sections 3.7.1.2 of NAESB Transmission Loading Relief Business Practice)

3.7.1.2 *The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility or Flowgate caused by Interchange Transactions utilizing Firm Transmission Service that are at or above the Curtailment Threshold and the Transmission Provider's Native Load and untagged Network Integration Transmission Service, as required by the Transmission Provider's filed tariff and as described in NAESB Requirement 3.11, "Parallel flow calculation procedure for reallocating or curtailing Firm Transmission Service."* [Found in this Document in NERC Section 5.1.6.7]

5.2.7.2.3. Step 3

(Sections 3.7.1.3 and 3.7.1.3.1, and 3.7.1.3.2 of NAESB Transmission Loading Relief Business Practice)

3.7.1.3 *The Reliability Coordinator shall curtail Firm Interchange Transactions utilizing Firm Transmission Service and shall ask for relief from the Transmission Provider's Native Load and untagged Network Integration Transmission Service as calculated in requirement 3.7.1.2 until the SOL or IROL violation has been mitigated.*

3.7.1.3.1 *The Reliability Coordinator will assist the Transmission Provider to ensure that available re-dispatch options will continue to be implemented.*

3.7.1.3.2 *The Reliability Coordinator shall assist the Transmission Provider in curtailing Transmission Service to Native Load and untagged Network Integration Transmission Service customers if such curtailments are required by the Transmission Provider's tariff.*

5.2.7.3. Actions

The Reliability Coordinator shall direct the curtailment of Interchange Transactions using Firm Transmission Service that are at or above the Curtailment Threshold for the following TLR Levels:

5.2.7.3.1. TLR Level 5B

Mitigate a SOL or IROL violation that remains after all Interchange Transactions using Non-firm Transmission Service has been curtailed under TLR Level 3B, and following attempts to reconfigure transmission under TLR Level 4.

5.2.8. TLR Level 6 – Emergency Procedures

5.2.8.1. Conditions

The Reliability Coordinator shall use following circumstances to establish the need for entering TLR Level 6:

- One or more Transmission Facilities are above their SOL or IROL.

- One or more Transmission Facilities will exceed their SOL or IROL upon the removal from service of a generating unit or another transmission facility.

5.2.8.2. Implementing Emergency Procedures

If the Reliability Coordinator deems that transmission loading is critical to Bulk Electric System reliability, the Reliability Coordinator shall immediately direct the Balancing Authorities and Transmission Operators in its Reliability Area to redispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until Interchange Transactions can be reduced utilizing the TLR Procedures or other procedures to return the system to a secure state. All Balancing Authorities and Transmission Operators shall comply with all requests from their Reliability Coordinator.

5.2.8.3. All Parties to Comply

All parties to comply as described in *[**Section 3.8** of the NAESB Transmission Loading Relief Business Practice Standard.]*

3.8 *When a Reliability Coordinator initiates a TLR level 6 (emergency conditions), all parties shall comply with the Reliability Coordinator's (s') requests to return the system to a secure state.*

5.2.9. TLR Level 0 – TLR Concluded

5.2.9.1. Interchange Transaction Restoration and Notification Procedures

The Reliability Coordinator initiating the TLR Procedure shall notify all Reliability Coordinators within the Interconnection via the RCIS when the SOL or IROL violations are mitigated and the system is in a reliable state, allowing Interchange Transactions to be reestablished at its discretion. Those with the highest transmission priorities shall be re-established first if possible.

5.2.9.2. Notification of Affected Parties

Notification of affected parties shall include notification prescribed in *[**Sections 3.9 and 3.9.1** of the NAESB Transmission Loading Relief Business Practice Standard.]*

3.9 *The Reliability Coordinator shall notify all affected parties when the Reliability Coordinator has returned the system to a reliable state.*

3.9.1 *The Reliability Coordinator shall re-establish Interchange Transactions at its discretion. Those with the highest transmission priorities shall be re-established first, as described in NAESB Requirement 2.1, as practicable.*

5.3. Interchange Transaction Curtailment Order for use in TLR Procedures

The specific TLR components of former Section 3 have been moved to their respective TLR Level descriptions within Sections 5.1 and 5.2 in this document.

5.4. Mitigating Constraints On and Off the Contract Path during TLR

The discussion of On Contract Path / Off Contract Path has been moved to NAESB Appendix A — Mitigating Constraints On and Off the Contract Path during TLR.

5.5. Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR

Section 5 is now contained in NAESB Appendix B and referenced in Section 5.1.6.7 of (former Attachment 1) of this document.

5.6. Interchange Transaction Reallocation During TLR Levels 3A and 5A

Information formerly shown in this section is now included under Section 5.3.3 — TLR 3A and Section 5.3.6 — TLR 5A, or is contained in Section 7 — IDC Reference Document.

5.7. Interchange Transaction Curtailments during TLR Level 3B

Information formerly shown in this section is now included under Sections 5.2.4.1, 5.2.4.2, and 5.2.4.3 — TLR 3B or is contained in Section 7 — IDC Reference Document.

5.8. Appendices for Transmission Loading Relief Standard

Appendix 5A. **Transaction Management and Curtailment Process (See NERC Appendix A)**

Appendix 5B. **Transaction Curtailment Formula. (See NAESB Appendix C)**

Appendix 5C. **Sample NERC Transmission Loading Relief Procedure Log. (Removed – Obsolete)**

Appendix 5D. **Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service. (See NAESB Appendix B)**

Appendix 5E. **How the IDC Handles Reallocation. (See Section 7 - IDC Reference Document)**

Section 5E1: Summary of IDC Features that Support Transaction Reloading/Reallocation.

Section 5E2: Timing Requirements. (See Section 7 - IDC Reference Document)

Section 5E2: Sub-Priorities. (See Section 3.3.5, and its sub-parts, of the NAESB Business Practice Standard)

Appendix 5F. **Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service. (See Section 7 - IDC Reference Document)**

Appendix 5G. **Examples of On-Path and Off-Path Mitigation. (NAESB Appendix A)**

6. NAESB TLR BP GLOSSARY/DEFINITIONS OF TERMS

Glossary of Terms/Definitions:

[NOTE: Source is noted following each definition]

Approval Entity — An entity that has approval rights for an Interchange Transaction Tag. This includes Transmission Service Providers (TSPs), Balancing Authorities (BAs), Purchasing-Selling Entities (PSEs), and Load Serving Entities (LSEs) involved in the Interchange Transaction. *[Definition Section — NAESB Business Practice Standard]*

Area Control Error (ACE) — The instantaneous difference between a Balancing Authority's net actual and scheduled interchange, taking into account the effects of Frequency Bias and correction for meter error. *[Definition Section — NAESB Business Practice Standard]*

Automatic Generation Control (AGC) — Equipment that automatically adjusts generation in a Balancing Authority Area from a central location to maintain the Balancing Authority's interchange schedule plus Frequency Bias. AGC may also accommodate automatic inadvertent payback and time error correction. *[Definition Section — NAESB Business Practice Standard]*

Balancing Authority (BA) — The entity responsible for integrating resource plans ahead of time, maintaining load-interchange-generation balance within a Balancing Authority Area, and supporting Interconnection frequency in real time. *[Definition Section — NAESB Business Practice Standard]*

Balancing Authority Area (BAA) — An electrical system bounded by Interconnection (tie-line) metering and telemetry, where the Balancing Authority controls (either directly or by contract) generation to maintain its Interchange Schedule with other Balancing Authority Areas and contributes to frequency regulation of the Interconnection. *[Definition Section — NAESB Business Practice Standard]*

Bulk Electric System — The electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition. *[Definition Section — NAESB Business Practice Standard]*

Constrained Facility — A transmission facility (line, transformer, breaker, etc.) that is approaching, is at, or is beyond its SOL or IROL. *[Definition Section — NAESB Business Practice Standard]*

Constrained Flowgate — A Flowgate that is approaching, is at, or is beyond System Operating Limits (SOL) or Interconnection Reliability Operating Limits (IROL). *[Definition Section — NAESB Business Practice Standard]*

Constraint — A limitation placed on Interchange Transactions that flow over a Constrained Facility or Flowgate. *[Definition Section — NAESB Business Practice Standard]*

Contract Path — A predetermined Transmission Service electrical path between contiguous Transmission Service Providers established for scheduling and commercial settlement purposes that represents the continuous flow of electrical energy between the parties to a transaction. *[Definition Section — NAESB Business Practice Standard]*

Curtailment Threshold — The minimum Transfer Distribution Factor which, if exceeded, will subject an Interchange Transaction to curtailment to relieve a transmission facility Constraint. *[Definition Section — NAESB Business Practice Standard]*

Dynamic Schedule — A telemetered reading or value that is updated in real time and used as a schedule in the AGC/ACE equation and the integrated value of which is treated as a schedule for interchange accounting purposes. Commonly used for scheduling jointly owned generation to or from another Balancing Authority Area. *[Definition Section — NAESB Business Practice Standard]*

Firm Transmission Service — The highest quality service offered to customers under a filed rate schedule that anticipates no planned interruption. Firm Transmission Service includes Firm Point-to-point Transmission Service and Firm Network Integration Transmission Service. *[Definition Section — NAESB Business Practice Standard]*

Flowgate — A designated point of the transmission system through which the Interchange Distribution Calculator calculates the power flow from Interchange Transactions. *[Definition Section — NAESB Business Practice Standard]*

Frequency Bias — A value, usually expressed in megawatts per 0.1 hertz (MW/0.1 Hz), associated with a Balancing Authority Area that approximates the Balancing Authority Area's response to Interconnection and frequency error. *[Definition Section — NAESB Business Practice Standard]*

Generation Shift Factor (GSF) — A factor to be applied to a generator's expected change in output to determine the amount of flow contribution that change in output will impose on an identified transmission facility or monitored Flowgate. *[Definition Section — NAESB Business Practice Standard]*

Generator-to-Load Distribution Factor (GLDF) — The algebraic sum of a GSF and an LSF to determine to total impact of an Interchange Transaction on an identified transmission facility or monitored Flowgate. *[Definition Section — NAESB Business Practice Standard]*

Interchange Distribution Calculator (IDC) — The mechanism used by Reliability Coordinators in the Eastern Interconnection to calculate the distribution of Interchange Transactions over specific transmission interfaces, which are known as "Flowgates." It includes a database of all Interchange Transactions and a matrix of the Distribution Factors for the Eastern Interconnection. *[Definition Section — NAESB Business Practice Standard]*

Interchange Transaction — A transaction that crosses one or more Balancing Authorities' boundaries. The planned energy exchange between two adjacent Balancing Authorities. *[Definition Section — NAESB Business Practice Standard]*

Interchange Transaction Tag (Tag) — An Interchange Transaction being submitted for implementation according to NERC "Electronic Tagging Functional Specification," version 1.7.095. *[Definition Section — NAESB Business Practice Standard]*

Interconnection — Any one of the three major electric system networks in North America: Eastern, Western, and ERCOT. *[Definition Section — NAESB Business Practice Standard]*

Interconnection Reliability Operating Limit (IROL) — The value (such as MW, MVar, Amperes, Frequency or Volts) derived from, or a subset of, the System Operating Limit, which if exceeded, could expose a widespread area of the Bulk Electric System to instability, uncontrolled separation(s) or cascading outages. *[Definition Section — NAESB Business Practice Standard]*

Load Shift Factor (LSF) — A factor to be applied to a load's expected change in demand to determine the amount of flow contribution that change in demand will impose on an identified transmission facility or monitored Flowgate. *[Definition Section — NAESB Business Practice Standard]*

Native Load (NL) — The demand imposed on an electric utility or an entity by the requirements of all customers located within a franchised service territory that the electric utility or entity has statutory or contractual obligation to serve. *[Definition Section – NAESB Business Practice Standard]*

NERC — North American Electric Reliability Corporation *[Definition Section — NAESB Business Practice Standard]*

Network Integration (NI) Transmission Service — As specified in the Transmission Service Provider's tariff, service that allows an electric Transmission Customer to integrate, plan, economically dispatch and regulate its network resources in a manner comparable to that in which the transmission owner serves Native Load customers. *[Definition Section — NAESB Business Practice Standard]*

Non-Firm Transmission Service — As specified in the Transmission Service Provider's tariff, transmission service that is reserved and scheduled on an as-available basis and is subject to curtailment or interruption, and has less priority than Firm Transmission. *[Definition Section — NAESB Business Practice Standard]*

Per Generator Method — A methodology used by the IDC to calculate the portion of parallel flows on any Constrained Facility or Flowgate due to Network Integrated (NI) transmission service customers and service to Native Load (NL) customers for each Balancing Authority. *[Definition Section — NAESB Business Practice Standard]*

Point-to-point (PTP) Transmission Service — As specified in the Transmission Service Providers tariff, Transmission Service reserved and/or scheduled between specified points of receipt and delivery. *[Definition Section — NAESB Business Practice Standard]*

Purchasing-Selling Entity (PSE) — The entity that purchases or sells and takes title to energy capacity and interconnected operations services. PSE's may be affiliated or unaffiliated merchants and may and may not own generating facilities. *[Definition Section — NAESB Business Practice Standard]*

Reliability Coordinator Information System (RCIS) — The system that Reliability Coordinators use to post messages and share operating information in real time. *[Definition Section — NAESB Business Practice Standard]*

Reallocation — The process used to totally or partially curtail Transactions during TLR levels 3A, 3B or 5A events to allow Transactions using equal or higher priority to be implemented. *[Definition Section — NAESB Business Practice Standard]*

Reliability Area — The collection of generation, transmission, and loads within the boundaries of a Reliability Coordinator. Its boundary coincides with one or more Balancing Authority Areas. *[Definition Section — NAESB Business Practice Standard]*

Reliability Coordinator (RC) — An entity that provides the security assessment and emergency operations coordination for a group of Balancing Authorities, Transmission Service Providers, and Transmission Operators. *[Definition Section — NAESB Business Practice Standard]*

Sink Balancing Authority — The Balancing Authority in which the load (Sink) is located for an Interchange Transaction. (This will also be a receiving Balancing Authority for the resulting Interchange Schedule). *[Definition Section — NAESB Business Practice Standard]*

System Operating Limit (SOL) — The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. *[Definition Section — NAESB Business Practice Standard]*

Tie Facility(ies) — The transmission facility(ies) interconnecting Balancing Authority Areas. *[Definition Section — NAESB Business Practice Standard]*

Transfer Distribution Factor (TDF) — The portion of an Interchange Transaction, expressed in percent that flows across a transmission facility (Flowgate). *[Definition Section — NAESB Business Practice Standard]*

Transmission Customer — Any eligible customer (or its designated agent) that can or does execute a transmission service agreement or can or does receive transmission service. *[Definition Section — NAESB Business Practice Standard]*

Transmission Loading Relief (TLR) — A procedure used in the Eastern Interconnection to relieve potential or actual loading on a Constrained Facility or Flowgate. *[Definition Section — NAESB Business Practice Standard]*

Transmission Operator — The entity that operates or directs the operations of transmission facilities. *[Definition Section — NAESB Business Practice Standard]*

Transmission Service — Services needed to move energy from a receipt point to a delivery point provided to Transmission Customers by Transmission Service Providers. *[Definition Section — NAESB Business Practice Standard]*

Transmission Service Provider (TSP) or Transmission Provider (TP) — The entity that administers the transmission tariff and provides transmission services to qualified Transmission Customers under applicable transmission service agreements. *[Definition Section — NAESB Business Practice Standard]*

7. IDC Reference Document

7.1. How the IDC Handles Reallocation

The IDC algorithms reflect the reallocation and reloading principles presented in this Reference Documentation, as well as the reporting requirements, and status display. The IDC will obtain the tag submittal time from the tag authority, and post the reloading/reallocation information to the NERC TLR site.

Section C (IDC Features that Support Transaction Reloading/Reallocation) provides a summary of IDC features that support the reallocation process, and Section D (Timing Requirements) provides the details on the interface and display features. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) Electronic Tagging Functional Specification for details about the E-Tag system.

7.2. Communication and Timing Requirements to Support Reallocation

This section covers the communication and timing requirements to support reallocation during TLR Levels 3A and 5A. It should be noted that calling a TLR 3A does not necessarily mean that Interchange Transactions using Non-firm Transmission Service will always be curtailed the next hour. However, TLR Levels 3A and 5A trigger the approved tag submission deadline for Reallocation requirements and allow for a coordinated assessment of all Interchange Transactions tagged to start the upcoming hour.

The following timeline shall be utilized to support reallocation decisions during TLR Levels 3A or 5A. See Figures 2 and 3 for a depiction of the reallocation time line.

1. **Time Convention**. In this section, the beginning of the current hour shall be referenced as 00:00. The beginning of the next hour shall be referenced as 01:00. The end of the next hour shall be referenced as 02:00. See Figure 1.

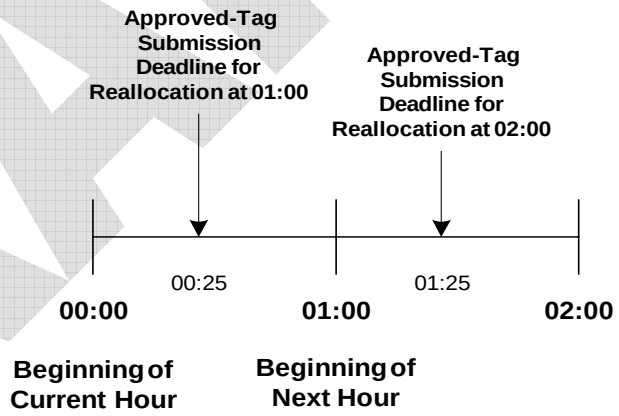


Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation

2. **Approved tag submission deadline for reallocation.** The reliability coordinators shall consider all approved tags for interchange transactions at or above the curtailment threshold that have been submitted to the IDC by 00:25 for reallocation at 01:00. See Figure 1. However, interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled.

    a. Reliability coordinators shall consider all approved tags submitted to the IDC beyond these deadlines for reallocation at 02:00 (for both firm and non-firm point-to-point transmission service). However, these interchange transactions will not be allowed to start or increase at 01:00.

b. The approved tag submission deadline for reallocation shall cease to be in effect as soon as the TLR level is reduced to 1 or 0.

3. **Off-hour Transactions**. Interchange transactions with a start time other than *xx*:00 shall be considered for reallocation at *xx*+1:00. For example, an interchange transaction with a start time of 01:05 and whose tag was submitted at 00:15 will be considered for reallocation at 02:00.

4. **Tag Evaluation Period.** Balancing authorities and transmission providers shall evaluate all tags submitted for reallocation and shall communicate approval or rejection by 00:25.

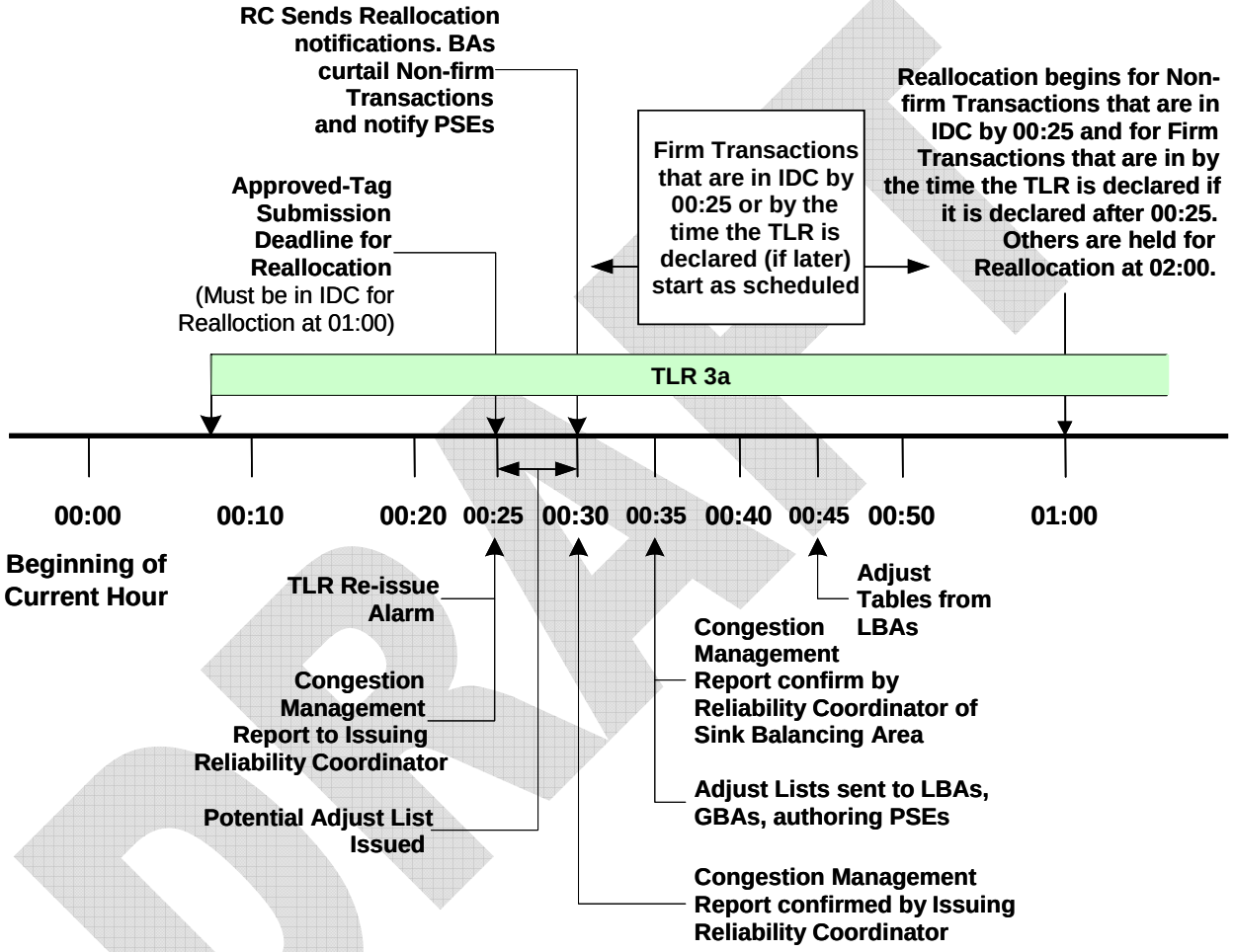


Figure 2 — Reallocation Timing for TLR 3A Called at 00:08

5. **Collective Scheduling Assessment Period.** At 00:25, the initiating reliability coordinator (the one who called and still has a TLR 3A or 5A in effect) shall run the IDC to obtain a three-part list of interchange transactions including their transaction status:

   a. Interchange transactions that may start, increase, or reload shall have a status of PROCEED, and
   b. Interchange transactions that must be curtailed or interchange transactions whose tags were submitted prior to the TLR 2 or higher being declared but were not permitted to start or increase shall have a status of CURTAILED, and
   c. Interchange transactions that are entered into the IDC after 00:25 shall have a status of HOLD and be considered for reallocation at 02:00. Also, interchange transactions

using non-firm point-to-point transmission service submitted after TLR 2 or higher was declared ("post-tagged") but have not been allowed to start shall retain the HOLD status until given permission to PROCEED or e-tag expires. (Note: TLR Level 2 does not hold interchange transactions using firm point-to-point transmission service).

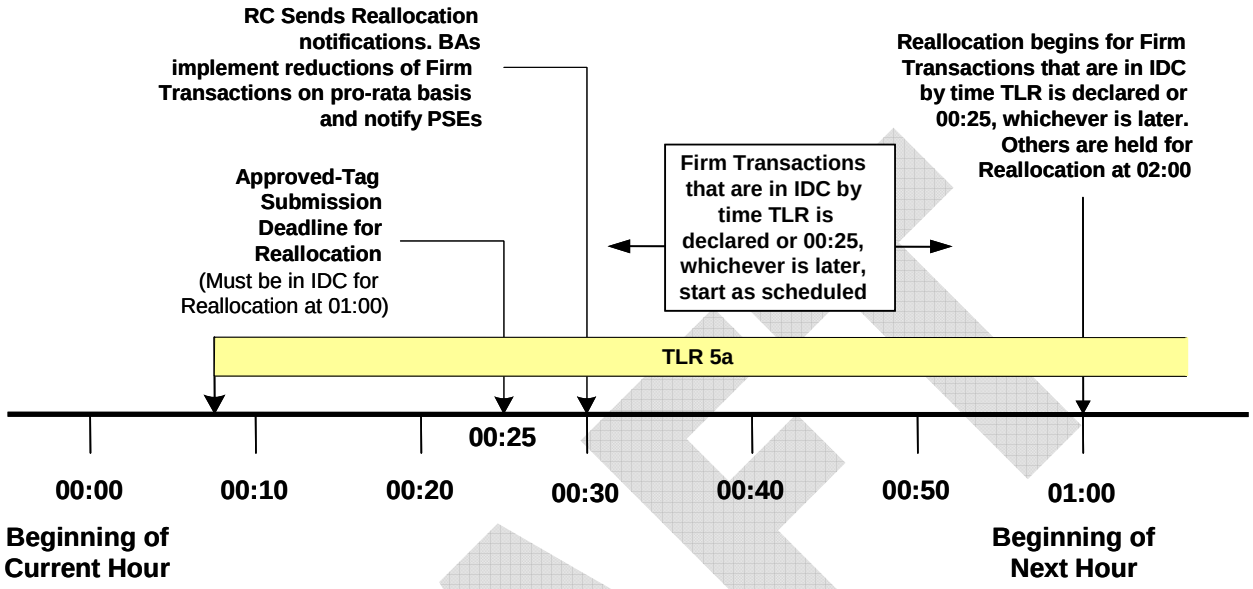


Figure 3 — Reallocation timing for TLR 5A called at 00:08.

d. The initiating reliability coordinator shall communicate the list of interchange transactions to the appropriate sink reliability coordinators via the IDC, who shall in turn communicate the list to the sink balancing authorities at 00:30 for appropriate actions to implement interchange transactions (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating reliability coordinator to input the necessary information (i.e., maximum flowgate loading and curtailment requirement) into the IDC by 00:25.

e. Subsequent required reports before 01:00 shall allow the reliability coordinators to include those interchange transactions whose tags were submitted to the IDC after the approved tag submission time for reallocation and were given the HOLD status (not permitted to PROCEED). Transactions at or above the curtailment threshold that are not indicated as PROCEED on reload/reallocation report shall not be permitted to start or increase the next hour.

Discussion: Note that TLR 2 does not initiate the approved tag submission deadline for reallocation, but a TLR3A or 5A does. It is, however, important to recognize the time when a TLR 2 is called, where applicable, to determine the status of a held transaction – "CURTAILED" if tagged before the TLR was called but "HOLD" if tagged after the TLR was called.

f. In running the IDC, the reliability coordinator shall have an option to specify the maximum loading of the constrained facility by all interchange transactions using point-to-point transmission service.

Discussion: This allows the reliability coordinator to take into consideration SOLs or IROLs and changes in interchange transactions using other than point-to-point transmission service taken under the open access transmission tariff. This option is needed to avoid loading the constrained facility to its limit with known interchange transactions while other factors push the facility into a SOL or IROL violation and hence triggering the declaration of a TLR 3B or 5B.

g. Notification of interchange transaction status shall be provided from the IDC to the reliability coordinators via an IDC report. The reliability coordinators shall communicate this information to the balancing authorities and transmission operators.

6. **Customer Preferences on Timing to Call TLR 3A or 5A.** Reliability coordinators shall leave a TLR 2 and call a TLR 3A as soon as possible (but no later than 30 minutes) to initiate the approved tag submission deadline and start reallocating interchange transactions. Nevertheless, recognizing the approved tag submission deadline for reallocation, from a transmission customer perspective, it is preferable that the reliability coordinator calls a TLR 3A within a certain time period to allow for tag preparation and submission. See Figure 4.

Discussion: A reliability coordinator calls a TLR 2 or 3A whenever it deems necessary to indicate that a transmission facility is approaching its SOL or IROL. It is envisioned, though not required, that a TLR 2 or 3A is preceded by a period of a TLR 1 declaration, hence transmission customers should normally have advance notice of a potential constraint. For example, a TLR 3A initiated during the period 01:00 to 01:25 would allow the purchasing-selling entity to submit a tag for entry into the IDC by the approved tag submission deadline for reallocation at 02:00. See Figure 4. However, the preferred time period to declare a TLR 3A or 5A would be between 00:40 (when tags for next hour market have been submitted) and 01:15. This will allow the transmission customers a range of 15 to 35 minutes to prepare and submit tags. (Note: In this situation, the reliability coordinator would need to reissue the TLR 3A at 01:00.)

It must be emphasized that the preferred time period is not a requirement, and should not in any way impede a reliability coordinator's ability to declare a TLR 3A, 3B, 4, 5A, or 5B whenever the need arises.

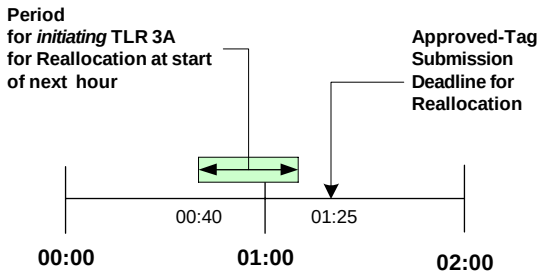


Figure 4. "Ideal" time for issuing TLR 3A for Reallocation at 02:00.

7.3. IDC Features that Support Transaction Reloading / Reallocation

Following is a summary of IDC features and E-Tag interface that support reloading/reallocation:

7.3.1. Information posted from IDC to NERC TLR site.

1. Restricted directions (all source/sink combinations that impact a constrained facility(ies) with TLR 2 or higher) will be posted to the NERC TLR site and updated as necessary.
2. TLR constrained facility status and transfer distribution factors (TDFs) will continue to be posted to NERC TLR site.
3. Lowest priority of interchange transactions (marginal "bucket") to be reloaded/reallocated next-hour on each TLR constrained facility will be posted on NERC TLR site. This will provide an indication to the market of priority of interchange transactions that may be reloaded/reallocated the following hours.

7.3.2. IDC Logic, IDC Report, and Timing

1. The reliability coordinator will run the IDC the reloading/reallocation report at approximately 00:26. The IDC will prompt the reliability coordinator to enter a maximum loading value. The IDC will alarm if the reliability coordinator doesn't enter this value and issue a report by 00:30 or change from TLR 3A Level. The report will be distributed to balancing authorities and transmission operators at 00:30. This process repeats every hour as long as the approved tag submission deadline for reallocation is in effect (or until the TLR level is reduced to 1 or 0).
2. For interchange transactions in the restricted directions, tags must be submitted to the IDC by the approved tag submission deadline for reallocation to be considered for reallocation next-hour. The time stamp by the tag authority is regarded the official tag submission time.
3. Tags submitted to IDC after the approved tag submission deadline for reallocation will not be allowed to start or increase but will be considered for reallocation the next hour.
4. Interchange transactions in restricted directions that are not indicated as "PROCEED" on the reload/reallocation report will not be permitted to start or increase next hour.

7.3.3. Reloading/Reallocation Transaction Status

Reloading/Reallocation status will be determined by the IDC for all interchange transactions. The reloading/reallocation status of each interchange transaction will be listed on IDC reports and NERC TLR site as appropriate. An interchange transaction is considered to be in a restricted direction if it is at or above the curtailment threshold. Interchange transactions below the curtailment threshold are unrestricted and free to flow subject to all applicable reliability standards, business practices, and transmission tariff rules.

1. **HOLD:** Permission has not been given for the interchange transaction to start or increase, and it is waiting for the next reloading/reallocation

evaluation for which it is a candidate. Interchange transactions with E-tags submitted to the tag authority prior to TLR 2 or higher being declared (pre-tagged) will change to CURTAILED Status upon evaluation that does not permit them to start or increase. Interchange transactions, with E-tags submitted to the tag authority after TLR 2 or higher was declared (post-tagged), will retain HOLD Status until given permission to proceed or the E-Tag expires.

2. **CURTAILED:** Interchange transactions for which E-Tags were submitted to tag authority prior to TLR 2 or higher being declared (pre-tagged) and ordered to be curtailed totally, curtailed partially, not permitted to start, or not permitted to increase. Interchange transactions (pre-tagged or post-tagged) that were flowing and ordered to be reduced or totally curtailed. The balancing authority will indicate to the IDC through the E-Tag adjustment table the interchange transaction's curtailed values.
3. **PROCEED:** Interchange transaction is flowing or has been permitted to flow as a result of Reloading/Reallocation evaluation. The balancing authority will indicate through the E-Tag adjustment table to IDC if the interchange transaction will reload, start, or increase next-hour per PSE's energy schedule as appropriate.

7.3.4. Reallocation/Reloading Priorities

1. Interchange transaction candidates are ranked for loading and curtailment by priority. This is called the "Constrained Path Method," or CPM. (secondary, hourly, daily, … firm etc). Interchange transactions are curtailed and loaded pro-rata within priority level per TLR algorithm.
2. Reloading/Reallocation of interchange transactions are prioritized first by priority per CPM. E-Tags must be submitted to the IDC by the approved tag submission deadline for reallocation of the hour during which the interchange transaction is scheduled to start or increase to be considered for reallocation.
3. During reloading/reallocation, interchange transactions using lower priority transmission service will be curtailed pro-rata to allow higher priority transactions to reload, increase, or start. Equal priority interchange transactions will not reload, start, or increase by pro-rata curtailment of other equal priority interchange transactions.
4. Reloading of interchange transactions using non-firm transmission service with CURTAILED Status will take precedence over starting or increasing of interchange transactions using non-firm transmission service of the same priority with PENDING Status.
5. Interchange transactions using firm point-to-point transmission service will be allowed to start as scheduled under TLR 3A as long as their E-Tag was received by the IDC by the approved tag submission deadline for reallocation of the hour during which the interchange transaction is due to start or increase, regardless of whether the E-tag was submitted to the tag authority prior to TLR 2 or higher being declared or not. If this is the initial issuance of the TLR 3A, interchange transactions using firm point-to-point

transmission service will be allowed to start as scheduled as long as their E-Tag was received by the IDC by the time the TLR is declared.

7.3.5. Total Flow Value on a Constrained Facility for Next Hour

1. The reliability coordinator will calculate the change in net flow on a constrained facility due to reallocation for the next hour based on:
    1.1. Present constrained facility loading, present level of interchange transactions, and balancing authorities NNL responsibility (TLR Level 5A) impacting the constrained facility,
    1.2. SOLs or IROLs, known interchange impacts and balancing authority NNL responsibility (TLR Level 5A) on the constrained facility the next hour, and
    1.3. Interchange transactions scheduled to begin the next hour.
2. The reliability coordinator will enter a maximum loading value for the constrained facility into the IDC as part of issuing the reloading/reallocation report.
3. The reliability coordinator is allowed to call for TLR 3A or 5A when approaching a SOL or IROL to allow maximum transactional flow next hour, and to manage flows without violating transmission limits.
4. The simultaneous curtailment and reallocation for a constrained facility is allowed. This reduces the flow over the constrained facility while allowing interchange transactions using higher priority transmission service to start or increase the next hour. This may be used to accommodate change in flow next-hour due to changes other than point-to-point interchange transactions while respecting the priorities of interchange transactions flowing and scheduled to flow the next hour. The intent is to reduce the need for using TLR 3B, which prevents new interchange transactions from starting or increasing the next hour.
5. The reliability coordinator must allow interchange transactions to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a SOL or IROL violation from (re)occurring and requiring holding or curtailments in the restricted direction.

7.4. Timing Requirements

7.4.1. TLR Levels 3A and 5A Issuing/Processing Time Requirement

1. In order for the IDC to be reasonably certain that a TLR Level 3A or 5A re-allocation/reloading report in which all tags submitted by the approved-Tag submission deadline for reallocation are included, the report must be generated no earlier than 00:25 to allow the 10-minute approval time for interchange transactions that start next hour.
2. In order to allow a reliability coordinator to declare a TLR Level 3A or 5A any time during the hour, the TLR declaration and reallocation/reloading report distribution will be treated as independent processes by IDC. That is, a reliability coordinator may declare a TLR Level 3A or 5A at any time during the course of an hour. However, if a TLR Level 3A or 5A is

declared for the next hour prior to 00:25 (see Figure 5 at right), the reallocation/reloading report that is generated will be made available to the issuing reliability coordinator only for previewing purposes, and can not be distributed to the other reliability coordinators or the market. Instead, the issuing reliability coordinator will be reminded by an IDC alarm at 00:25 to generate a new reallocation/reloading report that will include all tags submitted prior to the approved tag submission deadline for reallocation.

3. A TLR Level 3A or 5A reallocation/reloading report must be confirmed by the issuing reliability coordinator prior to 00:30 in order to provide a minimum of 30 minutes for the reliability coordinators with tags sinking in its reliability area to coordinate the reallocation and reloading with the sink balancing authorities. This provides only 5 minutes (from 00:25 to 00:30) for the issuing reliability coordinator to generate a reallocation/reloading report, review it, and approve it.
4. The TLR declaration time will be recorded in the IDC for evaluating transaction sub-priorities for reallocation/reloading purposes (see Sub-priority Table, in the IDC Calculations and Reporting section below).

7.4.2. Re-Issuing of a TLR Level 2 or Higher

Each hour, the IDC will automatically remind the issuing reliability coordinator (via an IDC alarm) of a TLR level 2 or higher declared in the previous hour or earlier about re-issuing the TLR. The purpose of the reminder is to enable the reliability coordinator to reallocate or reload currently halted or curtailed interchange transactions next hour. The reminder will be in the form of an alarm to the issuing reliability coordinator, and will take place at 00:25 so that, if the reliability coordinator re-issues the TLR as a TLR level 3A or 5A, all tags submitted prior to the approved tag submission deadline for reallocation are available in the IDC.

7.4.3. IDC Assistance with Next Hour Point-to-Point Transactions

In order to assist a reliability coordinator in determining the MW relief required on a constrained facility for the next hour for a TLR level 3A or 5A, the IDC will calculate and present the total MW impact of all currently flowing and scheduled point-to-point interchange transactions for the next hour. In order to assist a reliability coordinator in determining the MW relief required on a constrained facility for the next hour during a TLR level 5A, the IDC will calculate and present the total MW impact of all currently flowing and scheduled point-to-point interchange transactions for the next hour as well as balancing authorities with flows due to service to network customers and native load. The reliability coordinator will then be requested to provide the total incremental or decremental MW amount of flow through the constrained facility that can be allowed for the next hour. The value entered by the reliability coordinator and the IDC-calculated amounts will be used by the IDC to identify the relief/reloading amounts (delta incremental flow value) on the constrained facility. The IDC will determine the interchange transactions to be reloaded, reallocated, or curtailed to make room for the interchange transactions using higher priority transmission service. The following examples show the calculation performed by IDC to identify the delta incremental flow:

Example 1

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	-100 MW
Expected net flow next hour on constrained facility	850 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	850 MW – 800 MW = 50 MW
Amount to enter into IDC for interchange transactions using point-to-point transmission service	950 MW – 50 MW = 900 MW

Example 2

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	50 MW
Expected net flow next hour on constrained facility	1000 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	1000 MW – 800 MW = 200 MW
Amount to enter into IDC for interchange transactions using point-to-point transmission service	950 MW – 200 MW = 750 MW

Example 3

Flow to maintain on constrained facility	800 MW
Expected flow next hour from interchange transactions using point-to-point transmission service	950 MW
Contribution to flow next hour from service to network customers and native load	-200 MW
Expected net flow next hour on constrained facility	750 MW
Amount of interchange transactions using point-to-point transmission service to hold for reallocation	750 MW – 800 MW = -50 MW None are held

For a TLR levels 3B or 5B the IDC will request the reliability coordinator to provide the MW requested relief amount on the constrained facility, and will not present the current and next hour MW impact of point-to-point interchange transactions. The

reliability coordinator-entered requested relief amount will be used by IDC to determine the interchange transaction curtailments and flows due to service to network customers and native load (TLR Level 5B) in order to reduce the SOL or IROL violation on the constrained facility by the requested amount.

7.4.4. IDC Calculations and Reporting

At the time the TLR report is processed, the IDC will use all candidate interchange transactions for reallocation that met the approved tag submission deadline for reallocation plus those interchange transactions that were curtailed or halted on the previous TLR action of the same TLR event. The IDC will calculate and present an interchange transactions halt/curtailment list that will include reload and reallocation of interchange transactions. The interchange transactions are prioritized as follows:

1. All interchange transactions will be arranged by transmission service priority according to the constrained path method. These priorities range from 1 to 6 for the various non-firm transmission service products (TLR levels 3A and 3B). Interchange transactions using firm transmission service (priority 7) are used only in TLR levels 5A and 5B. Next-hour market service is included at priority 0 (zero)
2. In a TLR Level 3A the interchange transactions using non-firm transmission service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which interchange transactions to be loaded under a TLR 3A, various MW levels of an interchange transaction may be in different sub-priorities. The sub-priorities are shown in the table on the following page, and examples of interchange transactions using non-firm transmission service sub-priority settings are shown in the Transaction Sub-priority Examples section below.

Sub-Priority	***Purpose***	***Explanation and Conditions***
S1	To allow a flowing interchange transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.

Sub-Priority	*Purpose*	*Explanation and Conditions*
S2	To allow a flowing interchange transaction that has been curtailed or halted by TLR to reload to the *lesser* of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The interchange transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing interchange transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amount used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow an interchange transaction that had never started and was submitted to the tag authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the interchange transaction never had an active MW and was submitted to the IDC *after* the first TLR Action of the TLR event had been declared.)	The interchange transaction would not be allowed to start until all other interchange transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

3. All interchange transactions using firm transmission service will be put in the same priority group, and will be curtailed/reallocated pro-rata, independent of their current status (curtailed or halted) or time of submittal with respect to TLR issuance (TLR level 5A). Under a TLR 5A, all interchange transactions using non-firm transmission service that are at or above the curtailment threshold will have been curtailed and hence sub-prioritizing is not required.

7.4.5. Assignment of Interchange Transaction Status

All interchange transactions processed in a TLR are assigned one of the following statuses:

PROCEED: The interchange transaction has started or is allowed to start to the next hour MW schedule amount.

CURTAILED: The interchange transaction has started and is curtailed due to the TLR, or it had not started but it was submitted prior to the TLR being declared (level 2 or higher).

HOLD: The interchange transaction had never started and it was submitted after the TLR being declared – the interchange transaction is held from starting next hour, or the interchange transaction had never started and it was submitted to the IDC after the approved tag submission deadline – the interchange transaction is to be held

from starting next hour and is not included in the reallocation calculations until following hour.

Upon acceptance of the TLR interchange transaction reallocation/reloading report by the issuing reliability coordinator, the IDC will generate a report to be sent to NERC that will include the PSE name and Tag ID of each interchange transaction in the IDC TLR report. The interchange transaction will be ranked according to its assigned status of HOLD, CURTAILED or PROCEED. The reloading/reallocation report will be made available at NERC's public TLR site, and it is NERC's responsibility to format and publish the report.

7.4.6. Tag Reloading for TLR Levels 1 and 0

When a TLR Level 1 or 0 is issued, the constrained facility is no longer under SOL or IROL violation, and all interchange transactions are allowed to flow. In order to provide the reliability coordinators with a view of the interchange transactions that were halted or curtailed on previous TLR actions (level 2 or higher), and are now available for reloading, the IDC provides such information in the TLR report.

7.4.7. New Tag Alarming

Those interchange transactions that are at or above the curtailment threshold and are not candidates for reallocation because the tags for those interchange transactions were not submitted by the approved tag submission deadline for reallocation will be flagged as HOLD and must not be permitted to start or increase during the next hour. To alert reliability coordinators of those interchange transactions required to be held, the IDC will generate a report (for viewing within the IDC only) at various times. The report will include a list of all HOLD interchange transactions. In order not to overwhelm the reliability coordinator with alarms, only those who issued the TLR and those whose interchange transactions sink within their reliability area will be alarmed. An alarm will be issued for a given tag only once and will be issued for all TLR levels for which halting of new interchange transactions is required: TLR Levels 2, 3A, 3B, 5A and 5B.

7.4.8. Tag Adjustment

The interchange transactions with statuses of HOLD, CURTAILED or PROCEED must be adjusted by a tag authority or tag approval entity. Without the tag adjustments, the IDC will assume that interchange transactions were not curtailed/held and are flowing at their specified schedule amounts.

1. Interchange transactions marked as CURTAILED should be adjusted to a cap equal to, or at the request of the originating PSE, less than the reallocated amount (shown as the MW CAP on the IDC report). This amount may be zero if the interchange transaction is fully curtailed.
2. Interchange transactions marked as PROCEED should be adjusted to reload (NULL or to its MW level in accordance with its energy profile in the adjusted MW in the tag) if the interchange transaction has been previously adjusted; otherwise, if the interchange transaction is flowing in full, the tag authority need not issue an adjust.
3. Interchange transactions marked as HOLD should be adjusted to 0 MW.

7.4.9. Special Tag Status

There are cases in which a tag may be marked with a composite state of ATTN_REQD to indicate that tag authority/approval failed to communicate or there is an inconsistency between the validation software of different tag authority/approval entities. In this situation, the tag is no longer subject to passive approval and its status change to IMPLEMENT may take longer than 10 minutes. Under these circumstances, the IDC may have a tag that is issued prior to the tag submittal deadline that will not be a candidate for reallocation. Such tags, when approved by the tag authority, will be marked as HOLD and must be halted.

7.4.10. Transaction Sub-Priority Examples

The following describes examples of interchange transactions using non-firm transmission service sub-priority setting for an interchange transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in e-tag.

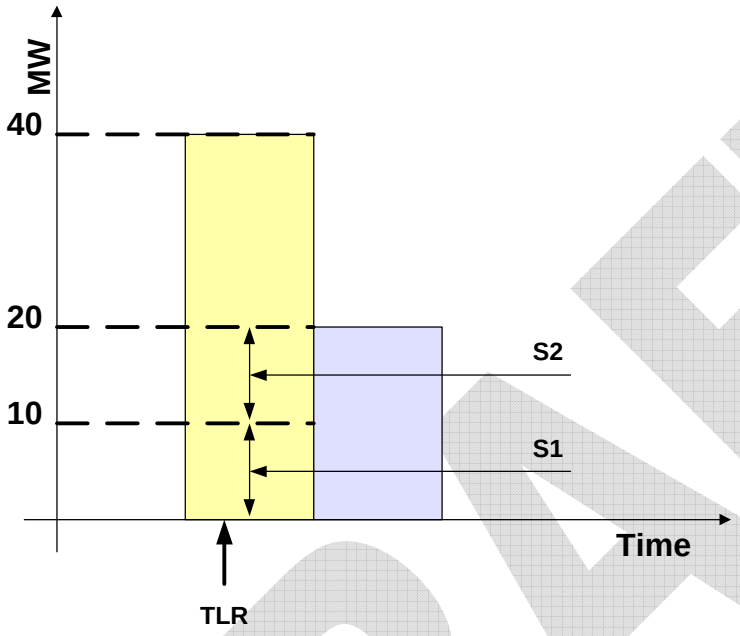
Example 1 – Interchange transaction curtailed, next-hour energy profile is higher

Energy profile: current hour	20 MW
Actual flow following curtailment: current hour	10 MW
Energy profile: next hour	40 MW

Sub-priorities for Interchange Transaction (MW)		
Sub-Priority	***MW Value***	***Explanation***
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to current hour energy profile
S3	+20 MW	Load to next hour energy profile
S4		

Example 2 – Transaction curtailed, next-hour energy profile is lower

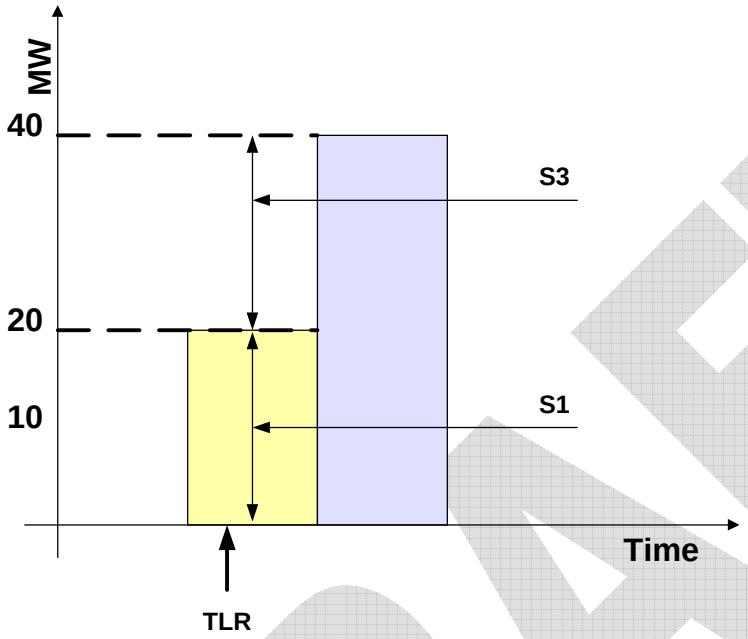
Energy profile: current hour	40 MW
Actual flow following curtailment: current hour	10 MW
Energy profile: next hour	20 MW



Sub-priorities for Interchange Transaction (MW)		
Sub-Priority	***MW Value***	***Explanation***
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to *lesser* of current and next-hour energy profile
S3	+0 MW	Next-hour energy profile is 20MW, so no change in MW value
S4		

Example 3 – Transaction not curtailed, next-hour energy profile is higher

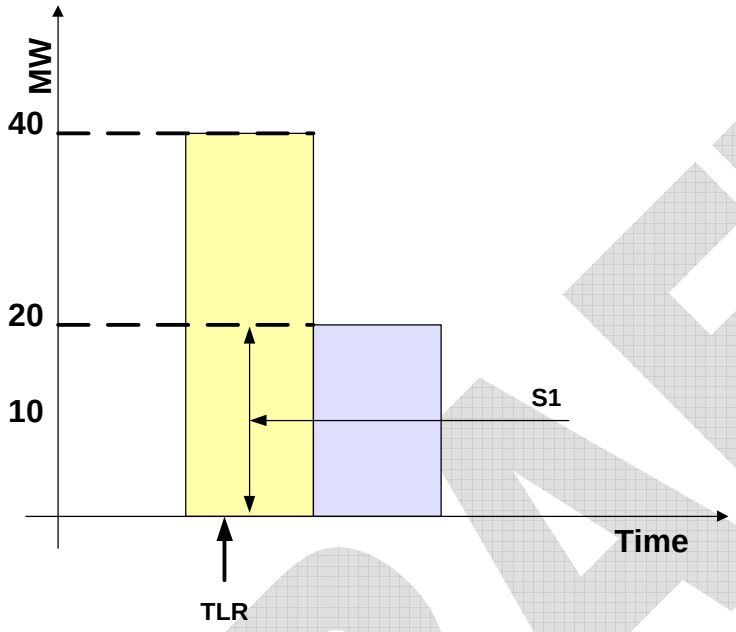
Energy profile: current hour	20 MW
Actual flow following curtailment: current hour	20 MW (no curtailment)
Energy profile: next hour	40 MW



Sub-priorities for Interchange Transaction (MW)		
Sub-Priority	***MW Value***	***Explanation***
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to *lesser* of current and next-hour energy profile
S3	+20 MW	Next-hour energy profile is 40MW
S4		

Example 4 – Transaction not curtailed, next-hour energy profile is lower

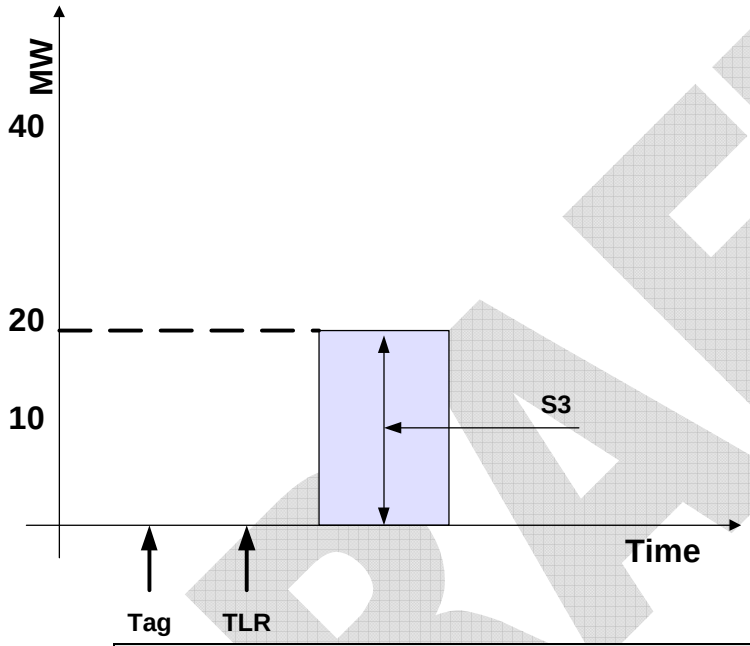
Energy profile: current hour	40 MW
Actual flow following curtailment: current hour	40 MW (no curtailment)
Energy profile: next hour	20 MW



Sub-priorities for Interchange Transaction (MW)		
Sub-Priority	***MW Value***	***Explanation***
S1	20 MW	Reduce flow to next-hour energy profile (20MW)
S2	+0 MW	Reload to *lesser* of current and next-hour energy profile
S3	+0 MW	Next-hour energy profile is 20MW
S4		

Example 5 – TLR Issued before Interchange Transaction was scheduled to start

Energy profile: current hour	0 MW
Actual flow following curtailment: current hour	0 MW (interchange transaction scheduled to start *after* TLR initiated)
Energy profile: next hour	20 MW



Sub-priorities for Interchange Transaction (MW)		
Sub-Priority	***MW Value***	***Explanation***
S1	0 MW	Interchange transaction was not allowed to start
S2	+0 MW	Interchange transaction was not allowed to start
S3	+20 MW	Next-hour energy profile is 20MW
S4	+0	Tag submitted prior to TLR

7.5. Interchange Transaction Curtailments During TLR Level 3

This section provides the details for implementing TLR Level 3B, which curtail interchange transactions using non-firm point-to-point transmission service to assist the reliability coordinator to recover from SOL or IROL violations.

The IDC shall issue ADJUST Lists to the Generation and Load Balancing Authorities and the Purchasing-Selling Entity who submitted the tag. The ADJUST List will include:

1. Interchange transactions using non-firm point-to-point transmission service that are to be curtailed or held during current and next hours.
2. Interchange transactions using firm point-to-point transmission service that were entered after 00:25 or issuance of TLR 3B (see Case 3 in Section F: Considerations for Interchange Transactions Using Firm Point-to-Point Transmission Service).

The sink balancing authority shall send the ADJUST lists back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3B being called.

The reliability coordinator shall be allowed to call a TLR Level 3A as soon as the SOL or IROL violation, which caused the TLR 3B to be called, has been mitigated.

1. If the TLR Level 3A is called before the hour 01, then a reallocation shall be computed for the start of that hour.
2. Interchange transactions must be in the IDC by the approved tag submission deadline for reallocation (see Section D: Timing Requirements).

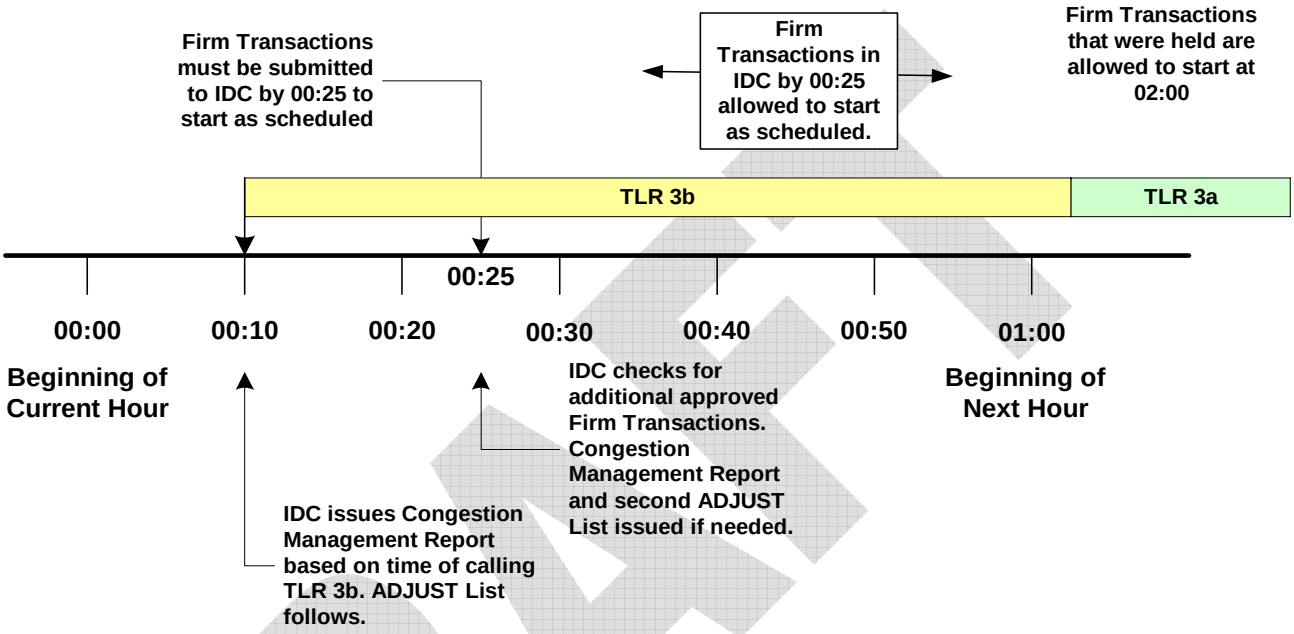
This section was removed from IRO-006-3, but is still a valid functionality within the IDC.

The Reliability Coordinator will no longer be required to call a TLR Level 3A as soon as the SOL or IROL violation that caused the TLR 3B to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3B

7.6. Considerations for Interchange Transactions Using Firm Point-to-Point Transmission Service

The following cases explain the circumstances under which an interchange transaction using firm point-to-point transmission service will be allowed to start as scheduled during a TLR 3B:

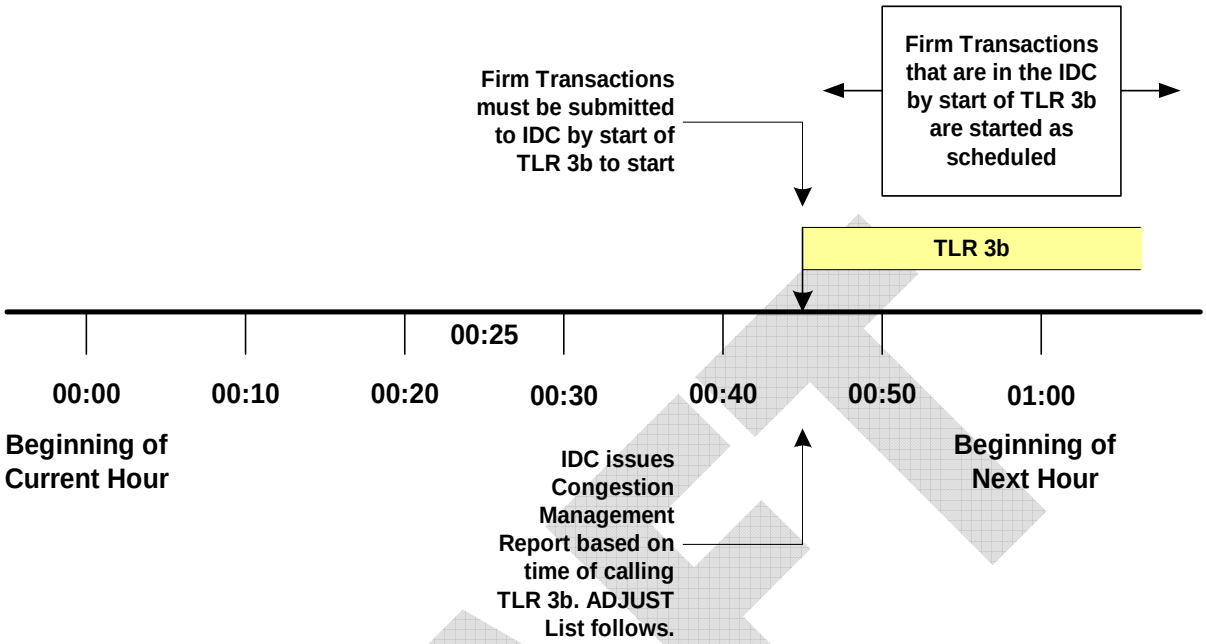
Case 1: TLR 3B is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.



1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List based upon the time the TLR 3B is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled.
3. At 00:25, the IDC will check for additional Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by that time and issue a second ADJUST List if those additional Interchange Transactions are found. At 00:25, a reallocation will be performed to maintain the desired flow at the top of the following hour.
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled.
5. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.
6. Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3A (or lower). If a TLR Level 3A is called:
   a. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 02:00.

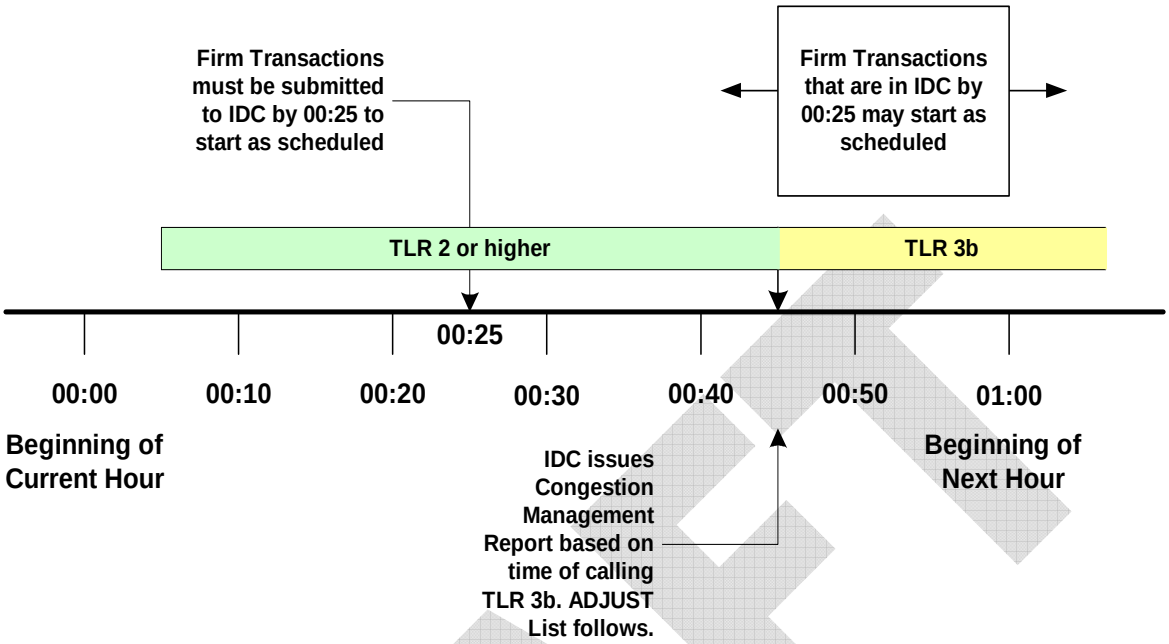
b. Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

Case 2: TLR 3B is called after 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC no later than the time at which the TLR 3B is called.



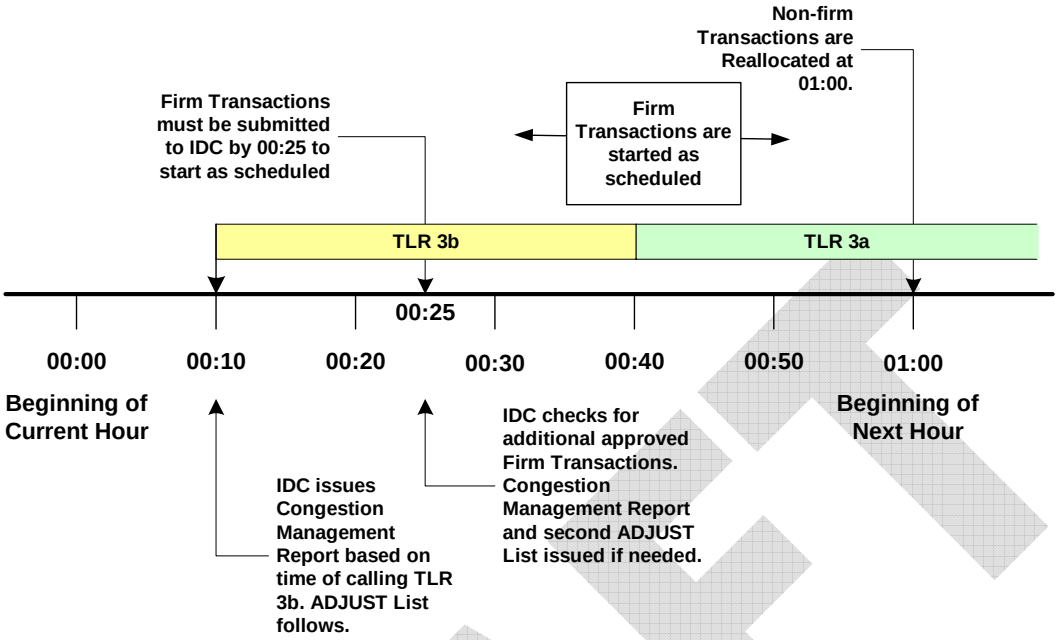
1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List at the time the TLR 3B is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.
3. After 00:25, non-firm interchange transactions will be curtailed to meet the desired current hour relief and a reallocation will be performed to maintain the target flow identified for the current hour.
4. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by the time the TLR 3B was called will be allowed to start at as scheduled.
5. Interchange Transaction using Firm Point-to-Point Transmission Service that were submitted to the IDC after the TLR 3B was called will be held until the next issuance for TLR (either TLR 3B, 3A, or lower level).

Case 3. TLR 2 or higher is in effect, a TLR 3B is called after 00:25, and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to the IDC by 00:25.



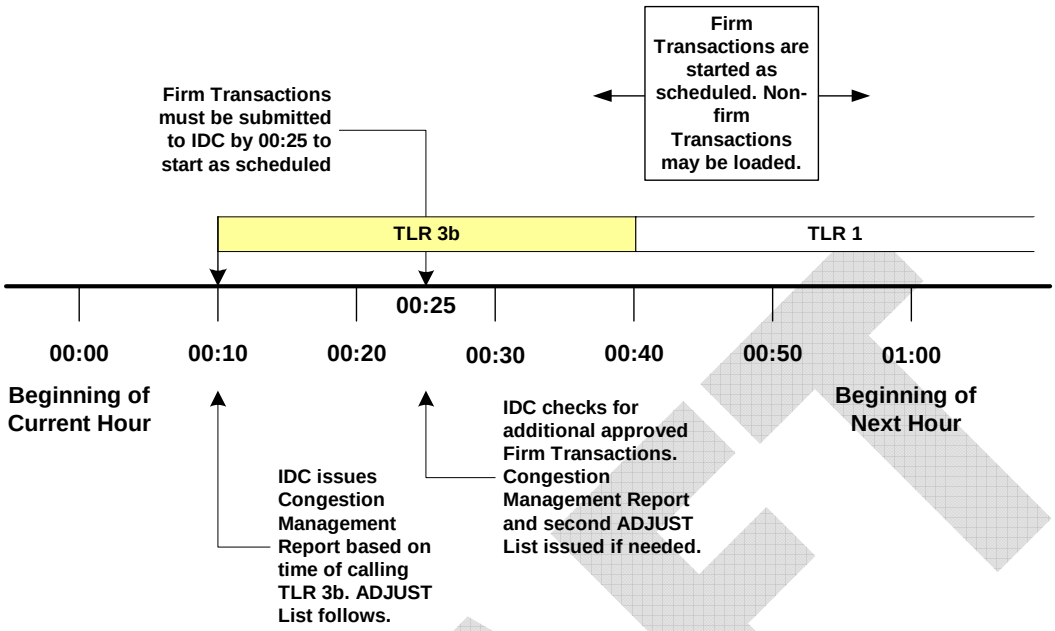
If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

Case 4. TLR 3B is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 3A is called at 00:40.



1. Same as Case 1, but TLR Level 3B ends at 00:40 and becomes TLR Level 3A.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled if in by the time the 3A is declared.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service are reallocated at 01:00.

Case 5. TLR 3B is called before 00:25 and the Interchange Transaction is submitted to the IDC by 00:25. TLR 1 is called at 00:40.



1. Same as Case 1, but TLR Level 3B ends at 00:40 and becomes TLR Level 1.
2. All Interchange Transactions using Firm Point-to-Point Transmission Service will start as scheduled.
3. All Interchange Transactions using Non-firm Point-to-Point Transmission Service may be loaded immediately.

7.7. IDC Treatment of TLR Level 6

In order for all reliability coordinators to understand how the IDC handles the issuance of a TLR Level 6 this section describes the IDC functionality that currently exists and options that the reliability coordinator has when declaring this critical TLR Level. This will help ensure the correct action is taken for the given event.

When a reliability coordinator issues a TLR Level 6 on a flowgate in the IDC, the application will search the non-firm and firm tags that are in the IDC database for those that affect the flowgate greater than or equal to 5%. It will create two sets of tags from this list for the reliability coordinator to curtail:

1. If the tag has an active MW amount in the current hour it will be curtailed to zero MW.
2. If the tag is planned to start the next hour it will not be allowed to start and will be curtailed to zero for the next hour.

Once this report is created and displayed as the congestion management report, the reliability coordinator will then have three options to move forward with the TLR Level 6:

1. Confirm the curtailment list that contains the non-firm and firm complete curtailments for the current and next hour.
    1.1. This will alert the other reliability coordinators that a TLR Level 6 has been declared and that there are curtailments that need to be acknowledged for implementation.
    1.2. Once the sinking reliability coordinators acknowledge the curtailments the IDC will send a reliability cap of zero to the balancing authorities on the tags for curtailment implementation.
2. Exclude some or all of the tag curtailments from the congestion management report before declaring a TLR Level 6.
    2.1. This can be done by the issuing reliability coordinator using the "Re-issue/Exclude" option in the congestion management report.
    2.2. This will give the issuing reliability coordinator the option of selecting those transactions they wish to exclude from the TLR issuance.
    2.3. Once the appropriate tags are selected the reliability coordinator will re-issue the TLR and the list of excluded tags will appear on the congestion management report, but will not be in the curtailed state. The reliability coordinator will then have to confirm the TLR to send the TLR Level 6 notification to the other reliability coordinators.
    2.4. Any tags that were not chosen for exclusion will be sent out to the other reliability coordinators for acknowledgement and curtailment.
    2.5. This option allows the reliability coordinator to declare a TLR Level 6 without implementing tag curtailments.
3. Disregard some or all of the tag curtailments from the congestion management report while acknowledging the curtailments of a TLR Level 6:

3.1. The sinking reliability coordinator can only do this for each tag curtailment after they receive a TLR Level 6 congestion management report from the issuing reliability coordinator.

3.2. The sinking reliability coordinator will select the "Disregard" option for the tags they wish not to curtail. This is done in the acknowledgement screen.

3.3. When the "Disregard" option is chosen and the "Acknowledgement" button selected the IDC will update the congestion management report to identify to all reliability coordinators that the sinking reliability coordinator has disregarded the curtailment and does not plan on implementing it.

3.4. This will prompt the issuing reliability coordinator to initiate a conversation with the sinking reliability coordinator for further clarification on why the suggested curtailment will not take place.

8. NAESB APPENDICES

8.1. NAESB Appendix A —- Mitigating Constraints On and Off the Contract Path during TLR

8.1.1. On and Off Contract Path Constraints

Introduction

Reserving Transmission Service for an Interchange Transaction along a Contract Path may not reflect the actual distribution of the power flows over the transmission network from generation source to load sink. Interchange Transactions arranged over a Contract Path may, therefore, overload transmission elements on other electrically parallel paths. The curtailment priority of an Interchange Transaction depends on whether the Constrained Facility is on or off the Contract Path as detailed below.

A.1 Constraints ON the Contract Path (Sections 2.2 of NAESB Transmission Loading Relief Business Practice)

A.1.1 The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if the transmission link (i.e., a segment on the Contract Path) on the Constrained Facility is Non-firm Point-to-Point Transmission Service, even if other links in the Contract Path are firm. When the Constrained Facility is on the Contract Path, the Interchange Transaction takes on the Transmission Service Priority of the Transmission Service link with the Constrained Facility regardless of the Transmission Service Priority on the other links along the Contract Path. (Section 2.2.1.1 of NAESB Transmission Loading Relief Business Practice)

Discussion. The Transmission Operator simply has to call its Reliability Coordinator, request the TLR Procedure be initiated, and allow the curtailments of all Interchange Transactions that are at or above the Curtailment Threshold to progress until the relief is realized. Firm Point-to-Point Transmission Service links elsewhere in the Contract Path do not obligate Transmission Providers providing Non-firm Point-to-Point Transmission Service to treat the transaction as firm. For curtailment purposes, the Interchange Transaction's priority will be the priority of the Transmission Service link with the Constrained Facility. (See Requirement 4.1.2 below.)

A.1.2 The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if the transmission link on the Constrained Facility is Firm Point-to-Point Transmission Service, even if other links in the Contract Path are non-firm. Section 2.2.1.2 of NAESB Transmission Loading Relief Business Practice)

Discussion. The curtailment priority of an Interchange Transaction on a Contract Path link is not affected by the Transmission Service Priorities arranged with other links on the Contract Path. If the Constrained Facility is on a Firm Point-to- Point Transmission Service Contract Path link, then the curtailment priority of the Interchange Transaction is considered firm regardless of the Transmission Service arrangements elsewhere on the Contract Path. If the Transmission Provider provides its services under the FERC pro forma tariff, it may also be obligated to offer its Transmission Customer alternate receipt and delivery points, thus allowing the customer to curtail its Transmission Service over the Constrained Facilities.

A.2 Constraints OFF the Contract Path (Section 2.3 of NAESB Transmission Loading Relief Business Practice)

A.2.1 The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction non-firm if none of the transmission links on the Contract Path are on the Constrained Facility and if any of the transmission links on the Contract Path are Non-firm Point-to-Point Transmission Service; the Interchange Transaction shall take on the lowest Transmission Service Priority of all Transmission Service links along the Contract Path. (Section 2.3.1.1 of NAESB Transmission Loading Relief Business Practice)

Discussion. An Interchange Transaction arranged over a Contract Path where one or more individual links consist of Non-firm Point-to-Point Transmission Service is considered to be a non-firm Interchange Transaction for Constrained Facilities off the Contract Path. Sufficient Interchange Transactions that are at or above the Curtailment Threshold will be curtailed before any Interchange Transactions using Firm Point-to-Point Transmission Service are curtailed. The priority level for curtailment purposes will be the lowest level of Transmission Service arranged for on the Contract Path.

A.2.2 The Reliability Coordinator initiating TLR shall consider the entire Interchange Transaction firm if all of the transmission links on the Contract Path are Firm Point-to-Point Transmission Service, even if none of the transmission links are on the Constrained Facility and shall not be curtailed to relieve a Constraint off the Contract Path until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. (Section 2.3.1.2 of NAESB Transmission Loading Relief Business Practice)

Discussion. If the entire Contract Path is Firm Point-to-Point Transmission Service, then the TLR procedure will treat the Interchange Transaction as firm, even for Constraints off the Contract Path, and will not curtail that Interchange Transaction until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. However, Transmission Providers off the Contract Path are not obligated to reconfigure their transmission system or provide other congestion management procedures unless special arrangements are in place. Because the Interchange Transaction is considered firm everywhere, the Reliability Coordinator may attempt to arrange for Transmission Operators to reconfigure transmission or provide other congestion management options or Balancing Authorities to re-dispatch, even if they are off the Contract Path, to try to avoid curtailing the Interchange Transaction that is using the Firm Point-to-Point Transmission Service.

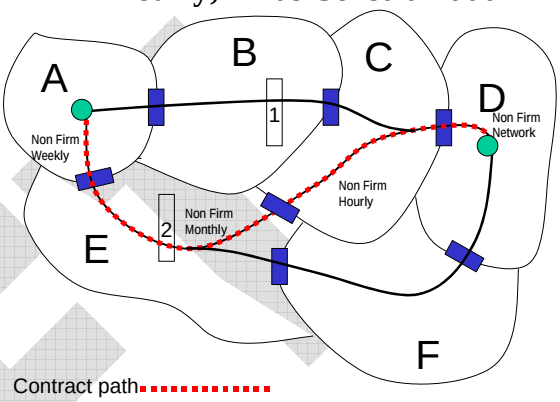
8.1.2. Examples of On-Path and Off-Path Mitigation

This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. When Reallocating or curtailing Interchange Transactions using Firm Transmission Service under TLR level 5A or 5B, the Transmission Service Providers may be obligated to perform comparable curtailments of its Transmission Service to Network Integration and Native Load customers.

Scenario:

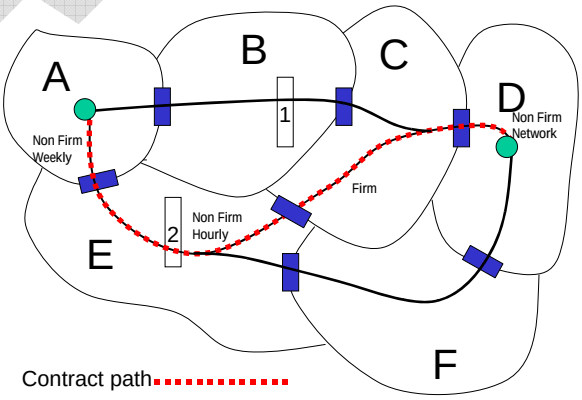
- Interchange Transaction arranged from system A to system D, and assumed to be at or above the Curtailment Threshold
- Contract Path is A-E-C-D (except as noted)
- Locations 1 and 2 denote Constraints

Case 1: E is a Non-Firm Monthly path, C is Non-Firm Hourly; E has Constraint at #2.



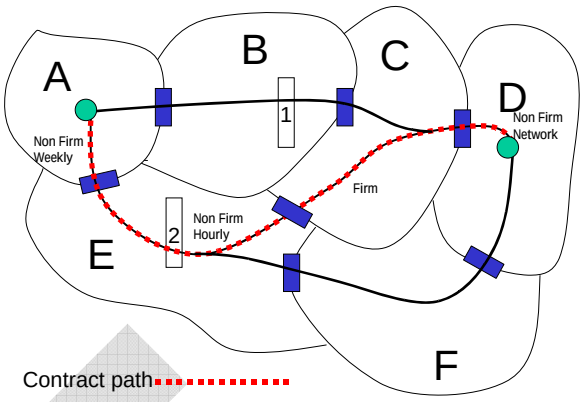
- E may call Reliability Coordinator for TLR Procedure to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-Firm monthly Point-to-point Transmission Service, even though it was using Non-Firm hourly Point-To-Point Transmission Service from C. That is, it takes on the priority of the link with the Constrained Facility or Flowgate along the Contract Path. (See Section 2.2.)

Case 2: E is a Non-Firm Hourly path, C is Firm; E has Constraint at #2.



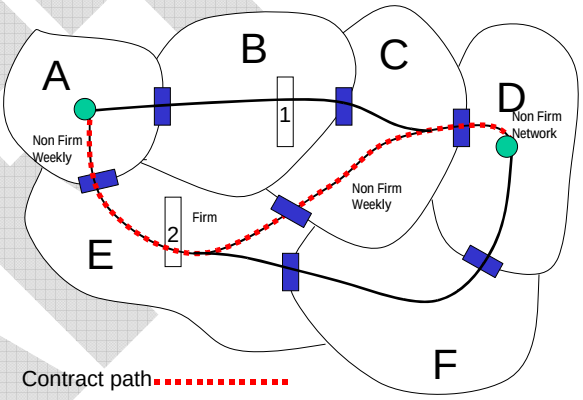
- Although C is providing Firm Transmission Service, the Constraint is not on C's system; therefore, E is not obligated to treat the Interchange Transaction as though it was being served by Firm Transmission Service.
- E may call Reliability Coordinator for TLR Procedure to relieve overload at Constraint #2.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-Firm hourly Point-to-point Transmission Service, even though it was using Firm Transmission Service from C. That is, when the Constraint is on the Contract Path, the Interchange Transaction takes on the priority of the link with the Constrained Facility or Flowgate. (See section 2.2.)

Case 3: E is a Non-Firm hourly path, C is Firm, B has Constraint at #1.



- B may call Reliability Coordinator for TLR Procedure to relieve overload at Constraint #1.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-Firm hourly Transmission Service, even if it was using Firm Transmission Service elsewhere on the path. When the Constraint is off the Contract Path, the Interchange Transaction takes on the lowest priority reserved on the Contract Path. (See section 2.3.)

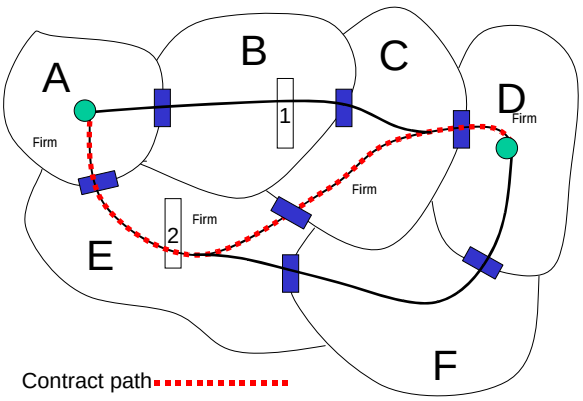
Case 4: E is a Firm path; A, D, and C are Non-Firm; E has Constraint at #2.



- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- E may then call Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-Firm Transmission Service first.
- E is obligated to try to reconfigure transmission to mitigate Constraint #2 in E before E may curtail the Interchange Transaction as ordered by the TLR. (See Section 2.2)

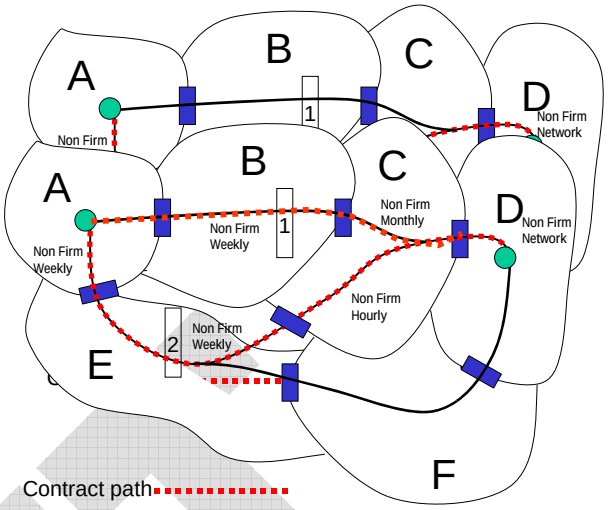
Case 5: The entire path (A-E-C-D) is Firm; E has Constraint at #2.

- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- E may call Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-Firm Transmission Service first.
- E is obligated to curtail Interchange Transactions using Non-Firm Transmission Service, and then reconfigure transmission on its system, or, if there is an agreement in place, arrange for reconfiguration or other congestion management options on another system, to mitigate Constraint #2 in E before the Firm A-D transaction is curtailed. (See section 2.2.)



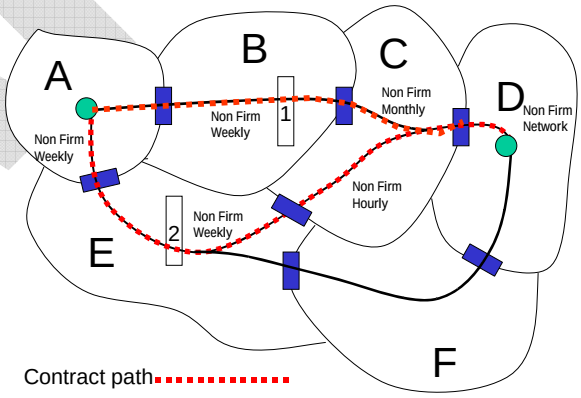
- A, C, D, may be requested by E to try to reconfigure transmission to mitigate Constraint #2 in E at E's expense. (See section 2.2.)

Case 6: The entire path (A-E-C-D) is Firm; B has Constraint at #1.



- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- B may call Reliability Coordinator for TLR Procedure for all Non-Firm Interchange Transactions that contribute to the overload at Constraint #1.
- Following the curtailment of all Non-Firm Interchange Transactions, the Reliability Coordinator(s) will determine which Transmission Operator(s) will reconfigure their transmission, if possible, to mitigate Constraint #1. (See section 2.3.)
- A-D transaction may be curtailed as a result. However, the A-D transaction is treated as a Firm Interchange Transaction and will be curtailed only after Non-Firm Interchange Transactions. (Note: This means that the Firm Contract Path is respected by all parties, including those not on the Contract Path.) (See section 2.3.)

Case 7: Two A-to-D transactions using A-B-C-D and A-E-C-D; A and B are Non-Firm; B has Constraint at #1



- B is not obligated to reconfigure transmission to mitigate Constraint at #1. (See section 2.2.)
- B may call for TLR Procedure to relieve overload at Constraint #1.
- If both A – D Interchange Transactions have the same TDF across Constraint #1, then they both are subject to curtailment. However, Interchange Transaction A – D using the A-B-C-D path is assigned a higher priority (priority NW on B), and would not be curtailed until after the Interchange Transaction using the path A-E-C-D (priority NH on the Contract Path as observed by B who is off the Contract Path).

8.2. NAESB Appendix B — Calculations

8.2.1. Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service

Introduction

The provision of Point-to-Point Transmission Service, Network Integration Transmission Service and service to Native Load results in parallel flows on the transmission network of other Transmission Operators. When a transmission facility becomes constrained curtailment of Interchange Transactions is required to allow Interchange Transactions of higher priority to be scheduled (Reallocation) or to provide transmission loading relief (Curtailment). An Interchange Transaction is considered for Reallocation or Curtailment if its Transfer Distribution Factor (TDF) exceeds the TLR Curtailment Threshold. In compliance with the Transmission Service Provider tariffs, Interchange Transactions using Non-firm Point-to-Point Transmission Service are curtailed first (TLR Level 3A and 3B), followed by transmission reconfiguration (TLR Level 4), and then the curtailment of Interchange Transactions using Firm Point-to- Point Transmission Service, Network Integration Transmission Service and service to Native Load (TLR Level 5A and 5B). Curtailment of Firm Point-to-Point Transmission Service shall be accompanied by the comparable curtailment of Network Integration Transmission Service and service to Native Load to the degree that these three Transmission Services contribute to the Constraint.

B.1 Requirements

A methodology, called the Per Generator Method without Counter Flow, or simply the Per Generator Method, has been programmed into the IDC to calculate the portion of parallel flows on any Constrained Facility due to service to Native Load of each Balancing Authority. The following requirements are necessary to assure comparable Reallocation or Curtailment of firm Transmission Service:

B.1.1 The Reliability Coordinator initiating a curtailment shall identify for curtailment all firm Transmission Services (i.e. Point-to-Point, Network Integration and service to Native Load) that contribute to the flow on any Constrained Facility by an amount greater than or equal to the Curtailment Threshold on a pro rata basis. (Section 3.11 of NAESB Transmission Loading Relief Business Practice)

B.1.2 For Firm Point-to-Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold. (Sections 3.11.1 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice)

B.1.3 For Network Integration Transmission Service and service to Native Load, the Generator-To-Load Distribution Factors must be greater than or equal to the Curtailment Threshold. (Sections 3.11 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice)

B.1.4 The Per Generator Method shall assign the amount of Constrained Facility relief that must be achieved by each Balancing Authority's Network Integration Transmission Service or service to Native Load. It shall not specify how the reduction will be achieved. (Sections 3.11.2.1, 3.11.2.1.1, 3.11.2.1.2, 3.11.2.1.3 and 3.11.2.1.4 of NAESB Transmission Loading Relief Business Practice)

B.1.5 All Balancing Authorities in the Eastern Interconnection shall be obligated to achieve the amount of Constrained Facility relief assigned to them by the Per

Generator Method. (Section 3.11.2.8 of NAESB Transmission Loading Relief Business Practice)

B.1.6 The implementation of the Per Generator Method shall be based on transmission and generation information that is readily available. (Section 3.11.2 of NAESB Transmission Loading Relief Business Practice)

B.2 Calculation Method

The calculation of the flow on a Constrained Facility due to Network Integration Transmission Service or service to Native Load shall be based on the Generation Shift Factors (GSFs) of a Balancing Authority's assigned generation and the Load Shift Factors (LSFs) of its native load, relative to the system swing bus. The GSFs shall be calculated from a single bus location in the IDC. The IDC shall report all generators assigned to native load for which the GLDF is greater than or equal to the Curtailment Threshold. (all Sections 3.11.2.2 of the NAESB Transmission Loading Relief Business Practice Standard)

8.2.2. Example Calculations of the Per Generator Method

Example 1: The Per Generator Method Calculation

An example of calculating Firm transaction curtailments using the Per Generator Method is provided in this section, assuming that the Constrained Flowgate is #3006 (Eau Claire-Arpin 345 kV circuit). The Generator-to-Load Distribution Factors (GLDFs) for this Flowgate are presented in Table B-1. In this example, a total Firm (PTP and tagged NI transactions) contribution of 708.85 MW is assumed to be given by the IDC.

From Table B-1, the untagged NI/NL contributions of all Balancing Authority Areas that impact the Constrained Facility or Flowgate are listed below:

ALTE = 27.0 MW

ALTW = 41.1 MW

NSP = 33.1 MW

WPS = 26.2 MW

Total NL & untagged NI contribution = 127.4 MW

Total Firm (PTP and NI/NL) contribution = 127.4 MW + 708.85 MW = 836.25 MW

NL & NI portion of total Firm contribution = 127.4/836.25 = 15.2%

PTP and tagged NI portion of total Firm contribution = 708.85/836.25 = 84.47%

Allocation of relief of the Constrained Facility or Flowgate to each Balancing Authority Area with impactive untagged NI/NL contribution is given below:

ALTE = 27.0 /127.4 x 0.152 = 3.2%

ALTW = 41.1 /127.4 x 0.152 = 4.9%

NSP = 33.1 /127.4 x 0.152 = 3.9%

WPS = 26.2 /127.4 x 0.152 = 3.1%

Assume that 50 MW of relief is needed. Then those Balancing Authority Areas that impact NI/NL contribution and Firm Transmission Service are responsible for the providing the following amounts of Flowgate relief:

Relief provided by removing Firm PTP and tagged NI = 0.845 x 50 = 42.25 MW

Relief provided by removing NL and untagged NI contributions ALTE = 0.032 x 50 = 1.60 MW

Relief provided by removing NL and untagged NI contributions ALTW = 0.049 x 50 = 2.45 MW

Relief provided by removing NL and untagged NI contributions NSP = 0.039 x 50 = 1.95 MW

Relief provided by removing NL and untagged NI contributions WPS = 0.031 x 50 = 1.55 MW

Table B-1

Native Load Responsibilities

Flowgate #: 3006 Flowgate Name: EAU CLAIRE-ARPIN 345 KV

Common Name	Generator Reference System	Generator Shift Factor (GSF)	Percent Assigned	GLDF Gen to Load Factor	Pmax (MW)	Energy on Flowgate
ALTE #364	Avail Assigned Gen: 1,514 Load Level: 1,796 Scaling: 1.000	ALTE_LD Load Shift Factor: -0.097	.	.	.	.
NED G1 13.8--1 CA=ALTE	39000_NED_G1	0.022	100	.1195	113.0	13.5
NED G2 13.8--2 CA=ALTE	39001_NED_G2	0.022	100	.1195	113.0	13.5
Summary	.	.	.	.	.	**27.0**
WPS #366	Avail Assigned Gen: 1,691 Load Level: 1,910 Scaling: 1.000	WPS_LD Load Shift Factor: -0.193	.	.	.	.
COL G1 22.0--1 CA=ALTE	39152_COL_G1	-0.094	32	.0993	525.0	16.6
COL G2 22.0--2 CA=ALTE	39153_COL_G2	-0.094	32	.0993	525.0	16.6
EDG G4 22.0--4 CA=ALTE	39207_EDG_G4	-0.118	32	.0752	331.0	7.9
Summary	.	.	.	.	.	**41.1**
NSP #623	Avail Assigned Gen: 8,492 Load Level: 8,484 Scaling: 0.999	NSP_LD Load Shift Factor: 0.206	.	.	.	.
WHEATON5 161--1 CA=NSP	61870_WHEATO	0.298	100	.0919	55.0	5.0
WHEATON5 161--2 CA=NSP	61870_WHEATO	0.298	100	.0919	63.0	5.8
WHEATON5 161--3 CA=NSP	61870_WHEATO	0.298	100	.0919	55.0	5.0
WHEATON5 161--4 CA=NSP	61870_WHEATO	0.298	100	.0919	55.0	5.0
WHEATON5 161--5 CA=NSP	61871_WHEATO	0.293	100	.0874	57.0	5.0
WHEATON5 161--6 CA=NSP	61871_WHEATO	0.293	100	.0874	57.0	5.0
WISSOTAG69.0--1 CA=NSP	69168_WISSOT	0.266	100	.0601	37.0	2.2
Summary	.	.	.	.	.	**33.1**

Common Name	Generator Reference System	Generator Shift Factor (GSF)	Percent Assigned	GLDF Gen to Load Factor	Pmax (MW)	Energy on Flowgate
ALTW #631	Avail Assigned Gen: 2,337 Load Level: 3,640 Scaling: 1.000	ALTW_LD Load Shift Factor: 0.065	.	.	.	.
FOXLK53G13.8--3 CA=ALTW	62016_FOXLK5	0.147	100	.0819	88.5	7.3
LANS5 4G22.0--4 CA=ALTW	62057_LANS5_	0.116	100	.0506	277.0	14.0
LANS5 3G22.0--3 CA=ALTW	62058_LANS5_	0.116	100	.0505	35.8	1.8
FAIRMONT69.0--3 CA=ALTW	65816_FAIRMO	0.151	100	.0857	5.0	0.4
FAIRMONT69.0--4 CA=ALTW	65816_FAIRMO	0.151	100	.0857	6.0	0.5
FAIRMONT69.0--5 CA=ALTW	65816_FAIRMO	0.151	100	.0857	12.0	1.0
FAIRMONT69.0--6 CA=ALTW	65816_FAIRMO	0.151	100	.0857	7.0	0.6
FAIRMONT69.0--7 CA=ALTW	65816_FAIRMO	0.151	100	.0857	6.5	0.6
Summary	.	.	.	.	.	**26.2**
.	.	.	.	.	.	.
TOTAL Summary	.	.	.	.	.	**127.4**

Example 2: Use of Per Generator Method while Simultaneously Curtailing Transmission Service

An example of the output of the IDC calculation of curtailment of Firm Transmission Service is provided below for the specific Constrained Facility or Flowgate identified in the NERC Book of Flowgates as Flowgate 1368. In this example, a total Firm PTP and tagged NI contribution to the Constrained Facility or Flowgate, as calculated by the IDC, is assumed to be 21.8 MW.

The Table B-2 below presents a summary of each Balancing Authority's responsibility to provide relief to the Constrained Facility or Flowgate due to its untagged NI Transmission Service and service to NL contribution to the Constrained Facility or Flowgate. In this example, Balancing Authority LAGN would be requested to curtail 17.3 MW of its total of 401.1 MW of flow contribution on the Constrained Facility or Flowgate.

In summary, Interchange Transactions would be curtailed by a total of 21.8 MW and untagged NI Transmission Service and service to NL would be curtailed by a total of 178.2 MW by the five Balancing Authorities identified in the table. These curtailments would provide a total of 200.0 MW of relief to the Constrained Facility or Flowgate.

Table B-2

Sink Reliability Coordinator	*Service Point*	*Scaled P Max*	*Flowgate untagged NI &NL MW*	*Current untagged NI &NL Relief*	*untagged NI &NL Responsibility*		*untagged NI &NL Responsibility Acknowledgement*	
					Inc/Dec	*Current Hr*	*Acknowledge Time*	*Total MW Resp.*
EES	EES	8429.7	2991.4	0.0	128.9	128.9	13:44	128.9
EES	LAGN	1514.0	718.6	0.0	31.0	31.0	13:44	31.0
SOCO	SOCO	5089.2	401.1	0.0	17.3	17.3	13:44	17.3
SWPP	CLEC	235.7	18.0	0.0	0.8	0.8	13:42	0.8
SWPP	LEPA	22.8	4.1	0.0	0.2	0.2	13:42	0.2
Total		**15291.4**	**4133.2**	**0.0**	**178.2**	**178.2**		**178.2**

8.3. NAESB Appendix C — Transaction Curtailment Formula

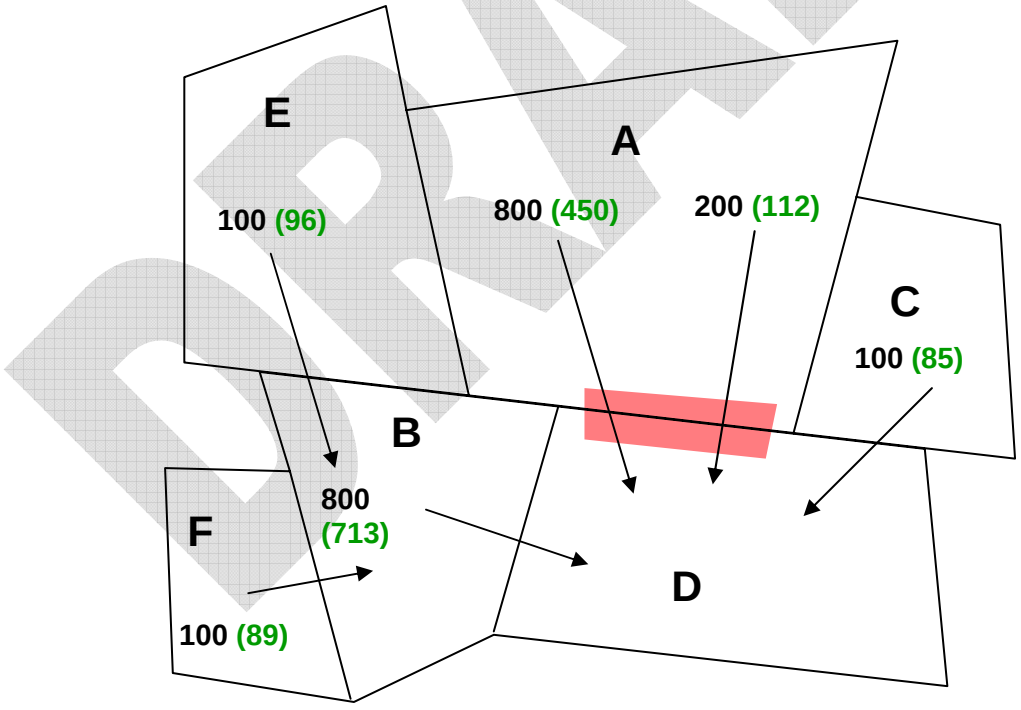
Example

This example is based on the premise that a transaction should be curtailed in proportion to its Transfer Distribution Factor (TDF) on the Constraints. Its effect on the interface is a combination of its size in MW and its effect based on its distribution factor.

Column	*Description*
1. Initial transaction	Interchange Transaction before the TLR Procedure is implemented.
2. Distribution factor	Proportional effect of the transaction over the constrained interface due to the physical arrangement and impedance of the transmission system.
3. Impact on the interface	Result of multiplying the transaction MW by the distribution factor. This yields the MW that flow through the constrained interface from the transaction. Performing this calculation for each transaction yields the total flow through the constrained interface from all the Interchange Transactions. In this case, 760 MW.
4. Impact weighting factor	"Normalization" of the total of the distribution factors in column 2. Calculated by dividing the distribution factor for each transaction by the total of the distribution factors.
5. Weighted maximum interface reduction	Multiplying the impact on the interface from each transaction by its impact weighting factor yields a new proportion that is a combination of the MW impact on the interface and the distribution factor.
6. Interface reduction	Multiplying the amount needed to reduce the flow over the constrained interface (280 MW) by the normalization of the weighted maximum interface reduction yields the actual MW reduction that each transaction must *contribute* to achieve the total reduction.
7. Transaction reduction	Divide by the distribution factor to see how much the transaction must be reduced to yield result we calculated in column 7. Note that the reductions for the first two Interchange Transactions (A-D (1) and A-D (2) are in proportion to their size since their distribution factors are equal.
8. New transaction amount	Subtracting the transaction reduction from the initial transaction yields the new transaction amount.
9. Adjusted impact on interface	A check to ensure the new constrained interface MW flow has been reduced to the target amount.

Allocation Based on Weighted Impact

	Transaction ID	1 Initial Transaction	2 Distribution Factor	3 (1)*(2) Impact on Interface	4 (2)/(2TOT) Impact Weighting Factor	5 (3)*(4) Weighted Max Interface Reduction	6 (5)*(Relief Requested)/(5 TOT) Interface Reductions	7 (6)/(2) Transaction Reductions	8 (1)-(7) New Transaction Amount	9 (8)*(2) Adjusted Impact on Interface
EXAMPLE 1	A-D(1)	800	0.60	480.00	0.34	164.57	209.73	349.54	450.46	270.27
	A-D(2)	200	0.60	120.00	0.34	41.14	52.43	87.39	112.61	67.57
	B-D	800	0.15	120.00	0.09	10.29	13.11	87.39	712.61	106.89
	C-D	100	0.20	20.00	0.11	2.29	2.91	14.56	85.44	17.09
	E-B	100	0.05	5.00	0.03	0.14	0.18	3.64	96.36	4.82
	F-B	100	0.15	15.00	0.09	1.29	1.64	10.92	89.08	13.36
	TOTAL	2100	1.75	760.00		219.71	280.00	553.45	1546.55	480.00
EXAMPLE 2	A-D(1)	1000	0.60	600.00	0.52	313.04	262.16	436.93	563.07	337.84
	B-D	800	0.15	120.00	0.13	15.65	13.11	87.39	712.61	106.89
	C-D	100	0.20	20.00	0.17	3.48	2.91	14.56	85.44	17.09
	E-B	100	0.05	5.00	0.04	0.22	0.18	3.64	96.36	4.82
	F-B	100	0.15	15.00	0.13	1.96	1.64	10.92	89.08	13.36
	TOTAL	2100	1.15	760.00		334.35	280.00	553.45	1546.55	480.00
EXAMPLE 3	A-D(1A)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(1B)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(1C)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(1D)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	A-D(2)	200	0.60	120.00	0.17	20.28	52.43	87.39	112.61	67.57
	B-D	800	0.15	120.00	0.04	5.07	13.11	87.39	712.61	106.89
	C-D	100	0.20	20.00	0.06	1.13	2.91	14.56	85.44	17.09
	E-B	100	0.05	5.00	0.01	0.07	0.18	3.64	96.36	4.82
	F-B	100	0.15	15.00	0.04	0.63	1.64	10.92	89.08	13.36
	TOTAL	2100	3.55	760.00		108.31	280.00	553.45	1546.55	480.00



8.4. NAESB Appendix D – Regional Differences

8.4.1. PJM/Midwest ISO, Inc. – Enhanced Congestion Management Method (Curtailment/Reload/Reallocation)

Organization

- The Balancing Authority participants of:
- Midwest ISO, Inc. (Hereafter referred to as MISO)

PJM Interconnection, L.L.C. (Hereafter referred to as PJM)

Business Practice

This methodology implements a Multi-Balancing Authority Energy Market, simplifies transaction information requirements for market participants, and allows for a means of providing Reliability Coordinators with appropriate information for security analysis and curtailments/reloads/reallocations and re-dispatch requirements.

To accommodate a Multi-Balancing Authority Energy Market, this methodology provides for regional differences from the NERC and NAESB specific standards listed below.

This methodology also applies in the event that the above Balancing Authorities are combined into fewer Balancing Authorities or into one Balancing Authority. This methodology is required to realize the benefits of a LMP market operation while increasing the level of granularity of information provided to the NAESB and NERC Transmission Loading Relief standards. The concepts contained within the PJM/MISO paper, "Managing Congestion to Address Seams," (see footnote 1) meet the requirements specified in this standard, its related appendices, and NERC Standards.

The processes proposed in this methodology affect the following specific sections:

- IDC Reference Document "How the IDC Handles Reallocation" of NERC IRO-006-1, effective date August 8, 2005.
- IDC Reference Document "Timing Requirements (IDC Calculations and Reporting Requirements" of NERC IRO-006-1.

Appendix C "Transaction Curtailment Formula" of this document Section 6 "Interchange Transaction Reallocation During TLR Levels 3A and 5A"of NERC IRO-006-1, For the purposes of clarity, this methodology describes many actions as those of the "RTO." It should be noted that "RTO" refers to the market-operating entity in which the subject Balancing Authorities participate.

Assignment of Sub-Priorities

Requirements

Requirements 3.3 and 3.6 of this document and as found in NERC IRO-006-1, Appendix E.

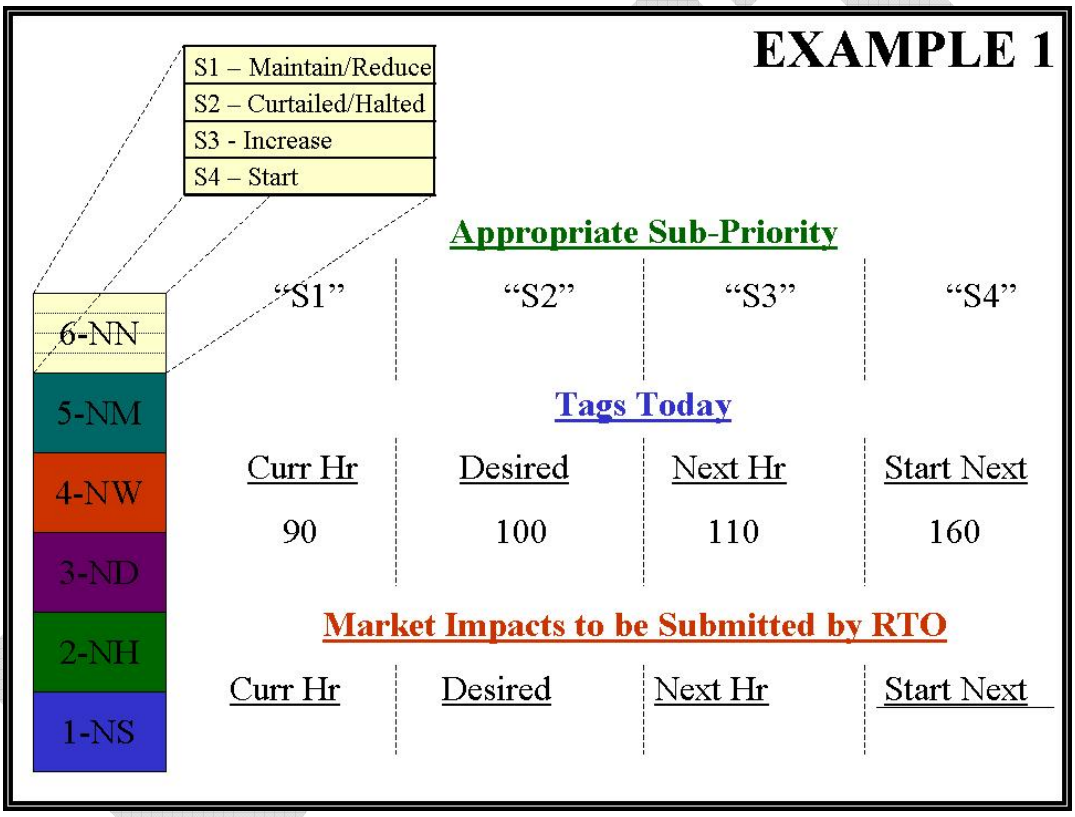
Explanation

The "IDC Calculations and Reporting Requirements" section of NERC IRO-006-1, Appendix E "Timing Requirements" states that "In a TLR Level 3A the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status."

The RTO shall use a "Market Flow Calculation" methodology to calculate the amount of energy flowing across all facilities included in the RTO's "Coordinated Flowgate List"[1] that is associated with the operation of the RTO market. This energy is identified as "market flow".

These market flow impacts for current hour and next hour shall be separated into their appropriate priorities[2] and provided to the IDC by the RTO. The market flows shall then be represented and made available for curtailment under the appropriate TLR Levels.

Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional "tags", the impacts and their desired levels shall be provided to the IDC for current hour and next hour. Therefore, the RTO, for the purposes of reallocation, shall be assigned by the NERC IDC a sub-priority (S1 thru S4) to these market flow impacts, using the same parameters as would be used if the impacts were in fact tagged transactions as detailed in NERC IRO-006-1, Appendix E "How the IDC Handles Reallocation". (See example 1 below).



Pro Rata Curtailment of Non-Firm Market Flow Impacts

Requirements

NAESB Appendix C of this document "Transaction Curtailment Formula"

[1] The RTO will conduct sensitivity studies to determine which external Flowgates (outside the RTO's footprint) are significantly impacted by the market flows of the RTO's control zones (currently the Balancing Authorities that exist today in the IDC). The RTO will perform the 4 studies as described in the MISO/PJM Paper "Managing Congestion to Address Seams" White Paper (Version 3.2, May 16, 2003, located on the NAESB website at http://www.naesb.org/pdf2/weq_bps101205w3.pdf) to determine which external Flowgates the RTO will monitor and help control. An external Flowgate selected by one of these studies will be considered a coordinated Flowgate (CF).

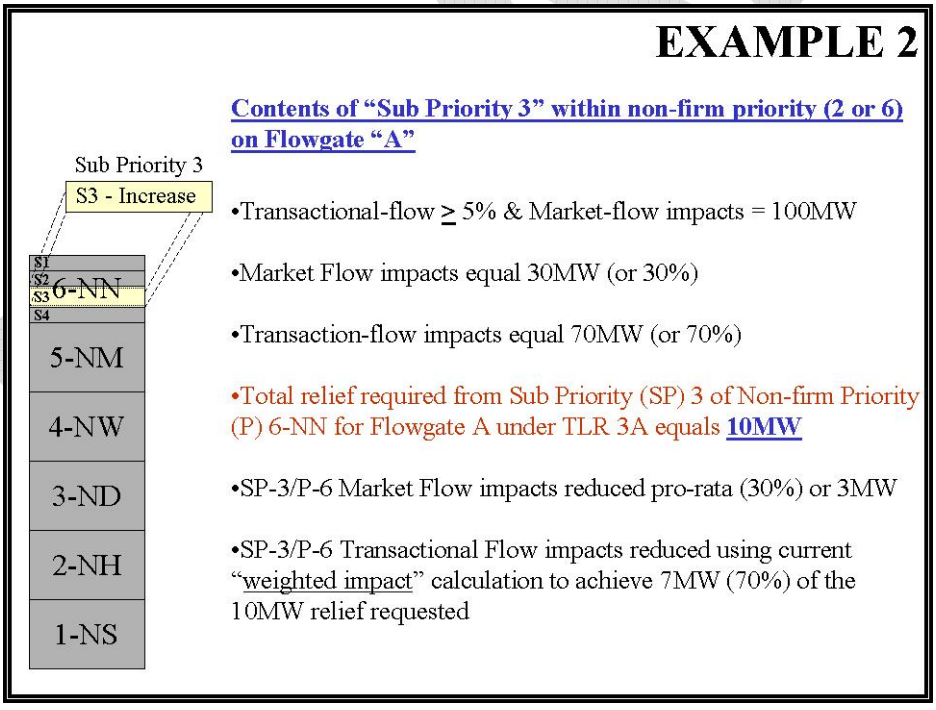
[2] *See footnote 1.* for details on how these priorities will be assigned

Explanation

Appendix C of this document "Transaction Curtailment Formula" details the formula used to apply a weighted impact to each Non-Firm tagged transaction (priorities 1 thru 6 as defined in section 2.1 of this business practice standard) for the purposes of curtailment by the IDC. For the purpose of curtailment, the non-firm market flow impacts (priorities 1 thru 6) submitted to the IDC by the RTO shall be curtailed pro rata as is done for Interchange Transactions using Firm Transmission Service. This method shall be used, because several of the values needed to assign a weighted impact using the process listed in Appendix C of this document "Transaction Curtailment Formula" will not be available:

- Distribution factor (no tag to calculate this value from)
- Impact on interface value (cannot be calculated without distribution factor)
- Impact weighting factor (cannot be calculated without distribution factor)
- Weighted maximum interface reduction (cannot be calculated without distribution factor)
- Interface reduction (cannot be calculated without distribution factor)
- Transaction reduction (cannot be calculated without distribution factor)

While the Non-Firm market flow impacts submitted to the IDC would be curtailed pro rata under this methodology, the impacting Non-Firm tagged transactions could still use the existing processes to assign the weighted impact value. Example 2 (below) illustrates how this would be accomplished.



NNL Calculation

Requirements

- Requirement 3.11 "Parallel flow calculation procedure of reallocating or curtailing Firm Transmission Service" of this document 'Parallel Flow Calculation Procedure for Reallocating or curtailing Firm Transmission Service"
- NERC "Parallel Flow Calculation Procedure Reference Document", version 1˜ section C (Calculation Method), approved November 16, 2000, as found in the NERC Operating Manual.

Explanation

Requirement 3.11 of this document and the NERC "Parallel Flow Calculation Procedure Reference Document", version 1 – section C (Calculation Method), approved November 16, 2000, as found in the NERC Operating Manual, currently require that the "Per Generator Method Without Counter Flow" (see footnote 1, PJM/MISO "Managing Congestion at the Seams" White Paper) methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each Balancing Authority.

The RTO shall use a "Market Flow Calculation" methodology to calculate the portion of parallel flows on all facilities included in the RTO's "Coordinated Flowgate List"[3] due to NI service or service to NL of each Balancing Authority.

The "Market Flow Calculation" differs from the Per Generator Method in the following ways:

- The contribution from all market area generators shall be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations shall use all positively impacting flows down to 0% with no threshold. Counter flows shall not be included in the market flow calculation.
- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar the "Per Generator Method" method, while providing granularity on the order of the most granular method developed by the NERC IDC Granularity Task Force. Counter flows are also calculated and tracked in order to account for and recognize that either the positive market flows may be reduced or counter flows may be increased to

[3] *See footnote 1.* The RTO will conduct sensitivity studies to determine which external Flowgates (outside the RTO's footprint) are significantly impacted by the market flows of the RTO's control zones (currently the balancing authorities that exist today in the IDC). The RTO shall perform the four studies (described in the MISO/PJM paper "Managing Congestion to Address Seams," Version 3.2) to determine which external Flowgates the RTO shall monitor and help control. An external Flowgate selected by one of these studies will be considered a Coordinated Flowgate (CF).

provide appropriate relief on a Flowgate. Under this methodology, the use of real-time values in concert with the market flow calculation effectively implements the most accurate and detailed method of the six IDC granularity options[4] considered by the NERC IDC Granularity Task Force.

Units assigned to serve a market area's load do not need to reside within the RTO's market area footprint to be considered in the market flow calculation. However, units outside of the RTO's market area shall not be considered when those units have tags associated with their transfers.

These NNL values shall be provided to the IDC to be included and represented with the calculated NNL values of all non-RTO Balancing Authorities for the purposes identifying and obtaining required NNL relief across a Flowgate in congestion under a TLR Level 5A/5B.

5% Curtailment Threshold

- Requirements
- Requirements 3.3.2.2, 3.4.1.1, and 3.6.1 of this document.
- Requirement 3.10 "Curtailment Threshold" of this document.

Explanation

Requirements 3.3.2.2, 3.4.1.1, and 3.6.1 of this document state the following: "The Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which the Interconnection-wide TLR procedure is called.

The Curtailment Threshold stated in requirement 3.10 is "5%".

The RTO intends to use a "Market Flow Calculation" methodology to calculate the amount of energy flowing across all facilities included in the RTO's "Coordinated Flowgate List" [5] that is associated with the operation of the RTO market. This energy is identified as "Market Flow".

The RTO intends to provide to the IDC any market flows with an impact of greater than 0% on a coordinated Flowgate. These market flows shall be represented and made available for curtailment under the appropriate TLR Levels. Hence, for the purposes of curtailment and reallocation, the RTO shall observe an impact threshold of 0% instead of 5% for its market flows across any Flowgate in the RTO Coordinated Flowgate List (see footnote 1).

The reason for this lower threshold is because of the size and scope of a large non-tagged energy market, such as the Multi-Balancing Authority market, and an impact of less than 5% on a Flowgate could still represent a large amount of the total capacity of that Flowgate. Therefore, to limit the Curtailment Threshold on these market flows to 5% could result in a

[4] The NERC IDC Granularity Task Force drafted "White Paper on the Future of Congestion Management", draft version 2.1, completed June of 2004 (located on the NAESB website at http://www.naesb.org/pdf/weq_bps120904a3.doc). Although the task force originally discussed six options for granularity, three options were included in the paper as possible options.

[5] *See footnote 1.* The RTO shall conduct sensitivity studies to determine which external Flowgates (outside the RTO's footprint) are significantly impacted by the market flows of the RTO's control zones (currently the control areas that exist today in the IDC). The RTO shall perform the 4 studies (described in the MISO/PJM "Managing Congestion to Address Seams" Whitepaper Version 3.2) to determine which external Flowgates the RTO will monitor and help control. An external Flowgate selected by one of these studies will be considered a coordinated Flowgate (CF).

Reliability Coordinator's inability to obtain the amount of relief that is needed to prevent the Flowgate from exceeding its operating limits.

Below is an example of how a market flow curtailment threshold of less than 5% could substantially contribute to congestion on a Flowgate:

Example:

- Energy market flows of 1,000 MW impact Flowgate A by 4% □ or 40 MW
- Flowgate A operating limit is 100 MW
- Fully 40% of the flow across Flowgate A is not identified and represented in the IDC, and therefore not available for curtailment under the TLR process.

Current Operating Reliability

There are no reliability implications from this regional difference.

8.4.2. Southwest Power Pool (SPP) – Enhanced Congestion Management Method (Curtailment/Reload/Reallocation)

The SPP regional difference, which is equivalent to the PJM/MISO waiver, shall apply within the SPP region as follows:

This regional difference impacts actions on behalf of those SPP Balancing Authorities that are participating in the SPP market. This regional difference does not impact those Balancing Authorities for which SPP will continue to act as the Reliability Coordinator but that are not participating in the SPP market.

SPP shall calculate the impacts of SPP market flow on all facilities included in SPP's Coordinated Flowgate List. SPP shall conduct sensitivity studies to determine which external flowgates (outside SPP's footprint) are significantly impacted by the market flows of SPP's control zones (currently the balancing areas that exist today in the IDC). SPP shall perform studies to determine which external flowgates SPP will monitor and help control. An external flowgate selected by one of the studies will be considered a Coordinated Flowgate (CF).

In its calculation, SPP shall consider market flow impacts as the impacts of energy dispatched by the SPP market and self-dispatched energy serving load in the market footprint, but not tagged. SPP shall use a method equivalent to the PJM/MISO Market Flow Calculation methodology identified in the PJM/MISO regional difference. Impacts of tagged transactions representing delivery of energy not dispatched by the SPP market and energy dispatched by the market but delivered outside the footprint will not be included in market flow.

SPP shall separate the market flow impacts for current hour and next hour into their appropriate priorities and shall provide those market flow impacts to the IDC. The market flows will be represented in the IDC and made available for curtailment under the appropriate TLR Levels. The market flow impacts will not be represented by conventional interchange transaction tags.

The SPP method will impact the following sections of the TLR Procedure:

Network and Native Load (NNL) Calculations □ The SPP regional difference modifies Section A of this appendix for the SPP region.

Section A of this appendix requires that the "Per Generator Method without Counter Flow" methodology be utilized to calculate the portion of parallel flows on any Constrained Facility due to Network Integration (NI) transmission service and service to Native Load (NL) of each balancing authority.

SPP shall use a "Market Flow Calculation" methodology to calculate the portion of parallel flows on all facilities included in the RTO's "Coordinated Flowgate List" due to NI service or service to NL of each balancing authority.

The Market Flow Calculation differs from the Per Generator Method in the following ways:

- The contribution from all market area generators will be taken into account.
- In the Per Generator Method, only generators having a GLDF greater than 5% are included in the calculation. Additionally, generators are included only when the sum of the maximum generating capacity at a bus is greater than 20 MW. The market flow calculations will use all positively impacting flows down to 0% with no threshold. Counter flows will not be included in the market flow calculation.
- The contribution of all market area generators is based on the present output level of each individual unit.
- The contribution of the market area load is based on the present demand at each individual bus.

By expanding on the Per Generator Method, the market flow calculation evolves into a methodology very similar to the "Per Generator Method" method, while providing increased Interchange Distribution Calculator (IDC) granularity. Counter flows are also calculated and tracked in order to account for and recognize that the either the positive market flows may be reduced or counter flows may be increased to provide appropriate relief on a flowgate.

These NNL values will be provided to the IDC to be included and represented with the calculated NNL values of other Balancing Authorities for the purposes of identifying and obtaining required NNL relief across a flowgate in congestion under a TLR Level 5A/5B.

Pro Rata Curtailment of Non-Firm Market Flow Impacts — The SPP regional difference modifies SeNAESB Appendix C "Transaction Curtailment Formula" of this document details the formula used to apply a weighted impact to each non-firm tagged Interchange Transaction (Priorities 1 thru 6) for the purposes of Curtailment by the IDC. For the purpose of Curtailment, the non-firm market flow impacts (Priorities 2 and 6) submitted to the IDC by SPP should be curtailed pro-rata as is done for Interchange Transaction using firm transmission service. This is because several of the values needed to assign a weighted impact using the process listed in Appendix C will not be available:

- Distribution Factor (no tag to calculate this value from)
- Impact on Interface value (cannot be calculated without Distribution Factor)
- Impact Weighting Factor (cannot be calculated without Distribution Factor)
- Weighted Maximum Interface Reduction (cannot be calculated without Distribution Factor)
- Interface Reduction (cannot be calculated without Distribution Factor)
- Transaction Reduction (cannot be calculated without Distribution Factor)

While the non-firm market flow impacts submitted to the IDC are to be curtailed pro rata, the impacting non-firm tagged Interchange Transactions could still use the existing processes to assign the weighted impact value.

Assignment of Sub-Priorities — The SPP regional difference modifies NERC's Attachment 1-IRO-006-1 IDC Reference Document "How the IDC Handles Reallocation", Section E2 "Timing Requirements", for the SPP region and requirements 3.3 and 3.6 of this business practice standard.

Under the header "IDC Calculations and Reporting" in Section E2 of the IDC Reference Document NERC IRO-006, IDC Reference Document to Attachment 1-IRO-006-1, the following requirement exists: "In a TLR Level 3A the Interchange Transactions using Non-firm Transmission Service in a given priority will be further divided into four sub-priorities, based on current schedule, current active schedule (identified by the submittal of a tag ADJUST message), next-hour schedule, and tag status. Solely for the purpose of identifying which Interchange Transactions to be loaded under a TLR 3A, various MW levels of an Interchange Transaction may be in different sub-priorities. The sub-priorities are shown in the following table:

Priority	Purpose	Explanation and Conditions
S1	To allow a flowing Interchange Transaction to maintain or reduce its current MW amount in accordance with its energy profile.	The MW amount is the lowest between currently flowing MW amount and the next-hour schedule. The currently flowing MW amount is determined by the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S2	To allow a flowing Interchange Transaction that has been curtailed or halted by TLR to reload to the *lesser* of its current-hour MW amount or next-hour schedule in accordance with its energy profile.	The Interchange Transaction MW amount used is determined through the e-tag ENERGY PROFILE and ADJUST tables. If the calculated amount is negative, zero is used instead.
S3	To allow a flowing Transaction to increase from its current-hour schedule to its next-hour schedule in accordance with its energy profile.	The MW amounts used in this sub-priority is determined by the e-tag ENERGY PROFILE table. If the calculated amount is negative, zero is used instead.
S4	To allow a Transaction that had never started and was submitted to the Tag Authority after the TLR (level 2 or higher) has been declared to begin flowing (i.e., the Interchange Transaction never had an active MW and was submitted to the IDC *after* the first TLR Action of the TLR Event had been declared.)	The Transaction would not be allowed to start until all other Interchange Transactions submitted prior to the TLR with the same priority have been (re)loaded. The MW amount used in this sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

SPP shall use a "Market Flow Calculation" methodology to calculate the amount of energy flowing across all facilities included in the RTO's "Coordinated Flowgate List" that is associated with the operation of the SPP market. This energy is identified as "market flow."

These market flow impacts for current hour and next hour will be separated into their appropriate priorities and provided to the IDC by SPP. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels.

Even though these market flow impacts (separated into appropriate priorities) will not be represented by conventional "tags," the impacts and their desired levels will still be provided to the IDC for current hour and next hour. Therefore, for the purposes of reallocation, a sub-priority (S1 thru S4) should be assigned to these market flow impacts by the NERC IDC as follows, using comparable logic as would be used if the impacts were in fact tagged transactions.

Priority	Purpose	Explanation and Conditions
S1	To allow existing market flow to maintain or reduce its current MW amount.	The currently flowing MW amount is the amount of market flow existing after the RTO has recognized the constraint for which TLR has been called. If the calculated amount is negative, zero is used instead.
S2	To allow market flow that has been curtailed or halted by TLR to reload to its desired amount for the current-hour.	This is the difference between the current hour unconstrained market flow and the current market flow. If the current-hour unconstrained market flow is not available, the IDC will use the most recent market flow since the TLR was first issued or, if not available, the market flow at the time the TLR was first issued.
S3	To allow a market flow to increase to its next-hour desired amount.	This is the difference between the next hour and current hour unconstrained market flow.

9. NERC APPENDICES

9.1 NERC Appendix A — Transaction Management and Curtailment Process

This flowchart depicts an overview of the Transaction Management and Curtailment process. Detailed decisions are not shown.