NERC/NAESB TLR Subcommittee

December 9–10, 2004
Houston, TX

Agenda

1. **Administration**
   a. Introductions
   b. Antitrust Procedures
   c. Roster
2. **Subcommittee Project Plan**
3. **Guiding Principles**
4. **History of the NERC TLR Procedure**
5. **Incorporation of WECC and ERCOT Procedures**
6. **Existing NERC TLR Procedures (Compilation of NERC Appendices 9C1, 9C1B and 9C1C)**
7. **Other Topics for Subcommittee Discussion**
   a. Current TLR curtailment threshold
   b. Current TLR waivers and field tests in effect
   c. IDC granularity
   d. PJM market flow calculation and TLR credit
   e. Dynamic Schedules
8. **TLR "Tools" and Services**
   a. Interchange Distribution Calculator
   b. NERC Central Repository for Security Events Web Page
   c. TLR Logs
   d. System Data Exchange
9. **Next Meetings and Agendas**

Item 1. Administration

a. Introductions

The chairman will ask the members to introduce themselves around the table. Because this is the first time this group has met, we will ask each member to provide a brief job description.

b. Antitrust Procedures

Because this is a joint NERC/NAESB meeting, we will review both organizations' antitrust guidelines.

Attachments

- NERC Antitrust Guidelines
- NAESB Antitrust Guidelines

c. Roster

Attachment

NERC/NAESB TLR Subcommittee

NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

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NERC ANTITRUST COMPLIANCE GUIDELINES

I. GENERAL

It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or which might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every NERC participant and employee who may in any way affect NERC's compliance with the antitrust laws to carry out this commitment.

Antitrust laws are complex and subject to court interpretation that can vary over time and from one court to another. The purpose of these guidelines is to alert NERC participants and employees to potential antitrust problems and to set forth policies to be followed with respect to activities that may involve antitrust considerations. In some instances, the NERC policy contained in these guidelines is stricter than the applicable antitrust laws. Any NERC participant or employee who is uncertain about the legal ramifications of a particular course of conduct or who has doubts or concerns about whether NERC's antitrust compliance policy is implicated in any situation should consult NERC's General Counsel immediately.

II. PROHIBITED ACTIVITIES

Participants in NERC activities (including those of its committees and subgroups) should refrain from the following when acting in their capacity as participants in NERC activities (e.g., at NERC meetings, conference calls and in informal discussions):

- Discussions involving pricing information, especially margin (profit) and internal cost information and participants' expectations as to their future prices or internal costs.
- Discussions of a participant's marketing strategies.
- Discussions regarding how customers and geographical areas are to be divided among competitors.
- Discussions concerning the exclusion of competitors from markets.
- Discussions concerning boycotting or group refusals to deal with competitors, vendors or suppliers.

Approved by NERC Board of Trustees
June 14, 2002

III. ACTIVITIES THAT ARE PERMITTED

From time to time decisions or actions of NERC (including those of its committees and subgroups) may have a negative impact on particular entities and thus in that sense adversely impact competition. Decisions and actions by NERC (including its committees and subgroups) should only be undertaken for the purpose of promoting and maintaining the reliability and adequacy of the bulk power system. If you do not have a legitimate purpose consistent with this objective for discussing a matter, please refrain from discussing the matter during NERC meetings and in other NERC-related communications.

You should also ensure that NERC procedures, including those set forth in NERC's Certificate of Incorporation and Bylaws are followed in conducting NERC business. Other NERC procedures that may be applicable to a particular NERC activity include the following:

- Organization Standards Process Manual
- Transitional Process for Revising Existing NERC Operating Policies and Planning Standards
- Organization and Procedures Manual for the NERC Standing Committees
- System Operator Certification Program

In addition, all discussions in NERC meetings and other NERC-related communications should be within the scope of mandate for or assignment to the particular NERC committee or subgroup, as well as within the scope of the published agenda for the meeting.

No decisions should be made nor any actions taken in NERC activities for the purpose of giving an industry participant or group of participants a competitive advantage over other participants. In particular, decisions with respect to setting, revising, or assessing compliance with NERC reliability standards should not be influenced by anti-competitive motivations.

Subject to the foregoing restrictions, participants in NERC activities may discuss:

- Reliability matters relating to the bulk power system, including operation and planning matters such as establishing or revising reliability standards, special operating procedures, operating transfer capabilities, and plans for new facilities.

- Matters relating to the impact of reliability standards for the bulk power system on electricity markets, and the impact of electricity market operations on the reliability of the bulk power system.

- Proposed filings or other communications with state or federal regulatory authorities or other governmental entities.

- Matters relating to the internal governance, management and operation of NERC, such as nominations for vacant committee positions, budgeting and assessments, and employment matters; and procedural matters such as planning and scheduling meetings.

Any other matters that do not clearly fall within these guidelines should be reviewed with NERC's General Counsel before being discussed.

NAESB Antitrust Guidelines

- The antitrust guidelines will be covered by Mr. Todd Oncken or Ms. Laura Kennedy. The points are: Antitrust guidelines direct meeting participants to avoid discussion of topics or behavior that would result in anticompetitive behavior including: restraint of trade and conspiracies to monopolize, unfair or deceptive business acts or practices, price discriminations, division of markets, allocation of production, imposition of boycotts, and exclusive dealing arrangements.

Any views, opinions or positions presented or discussed by meeting participants are the views of the individual meeting participants and their organizations. Any such views, opinions or positions are not the views, positions or opinions of NAESB, the NAESB Board of Directors, or any NAESB Committee or Subcommittee, unless specifically noted otherwise.

As it is not the purpose of the meeting to discuss any antitrust topics, if anyone believes we are straying into improper areas, please let us know and we will redirect the conversation.

NERC/NAESB TLR Subcommittee

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Item 2. Subcommittee Project Plan

Action

Agree on the subcommittee's project plan.

Background

The NERC/NAESB TLR Subcommittee is, at least for now, an ad hoc group with a special purpose. Instead of drafting a scope as we might for a NERC or NAESB subcommittee, we may wish to consider drafting a simple project plan instead. This is more specific than a scope, and clearly defines what the subcommittee will — and will not — do.

Here's a "straw man" project plan for the subcommittee:

Goals

1. Develop a list of Reliability Coordinator procedures for invoking an Interconnection-wide congestion management process. This list will be based on the specifications of the current *pro forma* tariff.
2. Develop a list of complementary business practices for invoking an Interconnection-wide congestion management process. This list will be based on the specifications of the current *pro forma* tariff.
3. Provide advice to the respective NERC and NAESB subcommittees as they develop their standards requests.
4. Provide recommendations to NERC and NAESB on managing the tools and services that support the TLR procedure.

Note: The subcommittee needs to decide how it wishes to deal with the congestion management procedures for the Eastern, Western, and ERCOT Interconnections.

Objectives

1. Review the current NERC Transmission Loading Relief Procedure and identify those sections that deal with reliability standards and those sections that are business practices.
2. Based upon objective 1, draft lists of NERC reliability requirements and NAESB business practices, including the necessary interrelationships and references that could be used to develop standards to replace the current NERC Transmission Loading Relief Procedure.
3. Provide advice to the Operating Reliability Subcommittee and Business Practices Subcommittee as they draft their requests for standards.
4. Determine the regulatory process for replacing the current transmission loading relief procedures with the new NAESB business practices. This may require discussions with the Federal Energy Regulatory Commission staff.
5. Review the Interchange Distribution Calculator and E-Tag functional requirements and develop procedures for handling these tools and services in the future. Also consider funding requirements.
6. Review current Alliant and Entergy requests for using a 3% curtailment threshold for certain flowgates and consider how to deal with similar requests from other transmission service providers.

7. Prepare progress reports for the NERC Operating Committee and NAESB WEQ Executive Committee.
8. Develop a subcommittee timeline. (We may do this under agenda Item 9 toward the end of the meeting.)

Exclusions

The NERC/NAESB TLR Subcommittee will not prepare NERC Standards Authorization Requests or NAESB Request for Initiation of a NAESB Standards.

Item 3. Guiding Principles

Action

Discussion

Another discussion we should consider is to define the attributes of a reliability standard and a business practice. This may help the subcommittee sort out those requirements that would be reliability standards and those that would be business practices.

The following is an excerpt from Appendix A, "JIC Coordination Guidelines," of the Amended and Restated Memorandum of Understanding for the North American Energy Standards Board, North American Electric Reliability Council, and the ISO/RTO Council, May 15, 2003.

> "In general, the functions identified in the functional model diagrams as "generator" (whether merchant or load-affiliated), "purchasing-selling entity," "load-serving entity," "market operator," "customer aggregator," and certain of the relationships and information flows of "transmission service provider," "transmission owner," and "transmission operator" are associated with how wholesale electric business practices and electronic communication protocols are developed for use by market participants. Additionally, market criteria such as product or service definitions, specifications, and compensation; prerequisites for participation in market and identification of costs and funding obligations; arrangements for product and service delivery to customers; creditworthiness requirements; market-related business practices; market settlement practices; and communication protocols in support of market criteria should be considered. Standards development proposals applicable to those functions and to the relationships and information flows among those functions normally would be assigned to NAESB, regardless of where the original request for the standard was filed.
>
> "In general, the functions identified in the functional model diagrams as "reliability authority," "balancing authority," "interchange authority," "compliance monitor," "NERC," and certain of the relationships and information flows of "transmission service provider," "transmission owner," and "transmission operator" are associated with the reliable operation of the bulk power system. Standards development proposals applicable to those functions and to the relationships and information flows among those functions normally would be assigned to NERC, regardless of where the original request for the standard was filed."

While the NERC TLR Procedure is explicitly written to the Reliability Coordinator, it implies that the Purchasing-Selling Entity has submitted a tag by a certain time ("Approved-Tag Submission Deadline") and with specific energy profiles and transmission reservation provisions. While some parts of the TLR procedure deal with the obligations of the Reliability Coordinator to maintain Interconnection reliability and communications with other Reliability Coordinators, the majority of the TLR procedure and its appendixes are business practices that specify how the Reliability Coordinator treats interchange transactions that the Purchasing-Selling Entity is implementing.

Item 4. History of the NERC TLR Procedure

Action

Discussion

The NERC TLR Procedure was developed primarily for two reasons:

1. Parallel flows (off the contract path) were overloading transmission facilities on other systems. The only way those systems could mitigate those overloads was to redispatch their own generation at their own expense, and

2. The *pro forma* transmission tariff had no provisions for dealing with the effects of transactions off the contract path.

The TLR procedure, in effect, extends the curtailment provisions in the *pro forma* tariff to all transmission systems in the Eastern Interconnection. The TLR procedure is closely tied to the E-Tag procedures.

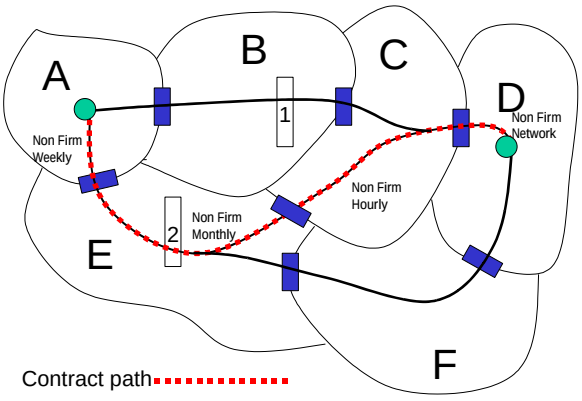
NERC published the following paper in 1998.

Summary

The NERC Transmission Loading Relief (TLR) Procedure provides a method for the Security (now Reliability) Coordinators to mitigate overloads on the transmission system in the Eastern Interconnection. The TLR Procedure considers *all* Interchange Transactions within the Interconnection, and calculates which Transactions are contributing to the transmission facility overload, regardless of whether the Transactions are on or off the "contract" path. These Transactions are then ranked using the transmission reservation priorities of the FERC pro forma tariff as a guide. Finally, the Transactions are curtailed in this rank order until the overload is removed.

Relation to Transmission Provider Tariff

Some have suggested that the NERC Transmission Loading Relief (TLR) Procedure violates the FERC pro forma tariff, or whatever filed tariff the Transmission Provider (TP) is using. In fact, that is not the case. Most transmission tariffs, including the FERC pro forma tariff, do not provide a method to mitigate transmission congestion on external transmission systems that result from Interchange Transactions on the contract path.



Consider this example (see diagram on right): A generation supplier in A sells energy to a customer in D using the A-E-C-D transmission contract path. If an overload occurs on E at location 2, E's tariff provision obligates it to relieve the constraint according to the tariff provisions.

Suppose, however, that his Interchange Transaction causes an overload at location 1 on the B transmission system, which is on a parallel path. None of the TPs tariffs on the contract path (A-E-C-D) obligate any of these providers to relieve constraints external to their systems. Likewise, TP B has no

obligation to any of the TPs on the contract path, and would not be compensated if it were to redispatch its generation to relieve the overload at 1.

Because the individual tariffs do not have provisions for mitigating congestion on other parties' systems, the NERC TLR Procedure is necessary to ensure that there is an organized way to keep the Interconnection secure.

Significant Revisions to the TLR Procedure

These are covered under agenda item 6 below.

Service to network customers and native load. At the Federal Energy Regulatory Commission's request, NERC revised the TLR procedure in 2000 so that transactions using firm point-to-point transmission service were curtailed in a manner equitable with service to the transmission provider's service to its network and native load.

Reallocation. To help ensure that transactions with higher priority transmission service could be better accommodated, NERC added a procedure (Appendix 9C1B) to reallocate transmission service during a TLR 3a or 5a.

The basic principles for Transaction Reallocation are built upon the premises of FERC Order 888, NERC operating policies and current business practices. Specifically, the key principles are:

1. Transaction Reallocation will normally only involve curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service (TLR 3a). However, Reallocation may be used during TLR 5a to allow the implementation of additional Interchange Transactions using Firm Transmission Service on a pro-rata basis.

2. Only those Interchange Transactions at or above the Curtailment Threshold for which a TLR 2 or higher is called are affected by the Reallocation procedure.

3. Interchange Transactions with higher transmission service priority will displace Interchange Transactions using lower priority transmission service.

4. Interchange Transactions using Non-firm Transmission Service will not be curtailed to allow the start or increase of another transaction having the same Non-Firm Transmission Service priority (marginal "bucket").

Clarification of loading transactions using firm point-to-point transmission service. NERC added Appendix 9C1C to clarify how transactions using firm point-to-point transmission service would be handled when curtailing transactions using non-firm point-to-point service under TLR 3b.

1. TLR 3b may be called at any time to help the Reliability Authority mitigate a System Operating Limit or Interconnection Reliability Operating Limit violation.

2. Only those Interchange Transactions at or above the Curtailment Threshold (currently 5%) will be considered for curtailment, holding, or halting.

3. Existing Interchange Transactions using Non-firm Point-to-Point Transmission Service will be curtailed as necessary to provide the required relief on the Constrained Facility.

4. If Interchange Transactions using Firm Point-to-Point Transmission Service are scheduled to start during the current hour or the following hour, additional Interchange Transactions using Non-firm Point-to-Point Transmission Service will be curtailed to provide room for those Interchange Transactions using Firm Point-to-Point Transmission Service.

5. Existing Interchange Transactions using Non-firm Point-to-Point Transmission Service that are not curtailed will not be allowed to increase (they may flow at the same or reduced level).

6. There is no Reallocation of Interchange Transactions using Non-firm Point-to-Point Transmission Service during a TLR 3b.

7. Interchange Transactions using Firm Point-to-Point Transmission Service will be allowed to start as explained in Section C, "Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service."

8. If, after all Interchange Transactions using Non-firm Point-to-Point Transmission Service have been curtailed and there is insufficient room for Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled, the Reliability Authority will progress to TLR Level 5b as necessary.

9. The IDC will issue ADJUST lists to the Generation and Load Control Areas and the Purchasing-Selling Entity who submitted the tag. The ADJUST list will include:

    a. Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed, halted, or held during current and next hours.

    b. 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 C below.)

10. The Load Balancing Authority must send the ADJUST tables back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called.

11. The Reliability Coordinator may call a TLR Level 3a as soon as the System Operating Limit or Interconnection Reliability Operating Limit Violation has been mitigated.

    a. If the TLR Level 3a is called before the hour 01, then a Reallocation will be computed for the start of that hour.

Item 5. Incorporation of WECC and ERCOT Procedures

Action

Decide on how to treat the WECC and ERCOT congestion management procedures.

Attachment

WECC Unscheduled Flow Reduction Procedure

Background

The WECC uses an "Unscheduled Flow Reduction Procedure" that is based on the Western Interconnection's flow paths. This procedure is not like the Eastern Interconnection's TLR procedure.

The ERCOT Protocols set forth the procedures and processes used by ERCOT and Market Participants for the orderly functioning of the ERCOT system and market. (*Excerpt from ERCOT website.*)

Appendix 9C2
WECC Unscheduled Flow Reduction Procedure

[WECC Reliability Criteria: http://www.wecc.biz/site_map.html#]

Appendix Subsections

The combination of scheduled and unscheduled flows on a Transfer Path may exceed the transfer capability of that Transfer Path. This Unscheduled Flow Reduction Procedure (USF Reduction Procedure) will be utilized to reduce the Unscheduled Flows (USF) across a constrained Qualified Transfer Path. The USF Reduction Procedure has the following parts:

1. Transfer Path Qualification
2. Transfer Path Re-qualification
3. Transfer Path Deletion
4. Actions Required Following Addition of a New Qualified Transfer Path
5. Controllable Device Qualification
6. Controllable Device Deletion
7. Accommodation Limits
8. General Terms
9. General Action Rules
10. Action Steps
11. Further Action
12. Term

This USF Reduction Procedure addresses the actions, which are required by all Members. This USF Reduction Procedure recognizes the effectiveness of coordinated control and operation of the Qualified Controllable Devices installed within the WECC systems. It is subject to review for its effectiveness (Section 13 of the Plan) and modification as provided in Section 5.2 of the Plan.

When a Qualified Transfer Path is constrained by USF, the Transfer Path Operator will notify all Members via the WECC communications system, and Members will take actions as required by this USF Reduction Procedure to reduce the effects of USF across the Qualified Transfer Path. Where Schedule adjustments are required by this USF Reduction Procedure, it is the responsibility of the

Member who is a Receiver to determine if any mitigation steps are required, and if so, to initiate appropriate actions. If the ultimate Receiver is not a Member, then the scheduling change administration responsibility shall belong to the Member most closely associated with the Schedule to the non-Member.

This USF Reduction Procedure is not intended to be prescriptive with regard to which Schedules are to be adjusted to effect the required USF Accommodation or Schedule reduction. Rather, when actions are required to reduce the effects of USF, it is expected that each Member will select the most appropriate Schedule reduction which will satisfy the intended accommodation and curtailment responses required by this USF Reduction Procedure.

Terms which are initially capitalized in this USF Reduction Procedure refer to defined terms in the WECC Unscheduled Flow Mitigation Plan.

1. Transfer Path Qualification

Requests for Transfer Path qualification shall be made directly to the UFAS. To qualify a Transfer Path under this Plan, a Transfer Path Operator must specify the applicable direction and provide documentation to satisfy the requirements for qualification set forth below:

a. The Transfer Path must be a transmission element or elements across which:
   i. a Schedule (MW) can be established,
   ii. Actual Flow (MW) is metered, and
   iii. Maximum Transfer Limit has been established and published in WECC Planning Coordination Committee or WECC Operations Committee documents.

b. An historical record exists to document that:
   i. for at least 100 hours in the most recent 36 months, Actual Flow across a Transfer Path (MW) has exceeded 97 percent of the Maximum Transfer Limit in MW, and at the same time
   ii. energy Schedules were curtailed because of USF.

c. The prospective Transfer Path Operator will be expected to make a presentation to the UFAS explaining how the Maximum Transfer Limit was determined and how the historical Actual Flow and/or Schedule curtailment records were obtained.

d. An incremental matrix for the current operating season and applicable to the proposed Transfer Path confirms that a feasible combination of Schedules between Sender and Receiver can create USF across the Transfer Path whose sum is equal to or greater than five percent of the Maximum Transfer Limit.

e. After the UFAS has reviewed the documentation and presentation, a recommendation will be forwarded to the WECC Operations Committee. The Transfer Path Operator may be requested to make a presentation to the WECC Operations Committee.

f. A Transfer Path is normally qualified for USF reduction in only one direction. The Transfer Path may be qualified for USF reduction in both directions, but supporting data must be provided for each direction.

2. Transfer Path Re-qualification

If there is a change in the Maximum Transfer Limit for an existing Qualified Transfer Path or the addition of a Controllable Device in the Qualified Transfer Path, the Transfer Path

Operator shall make a presentation to the UFAS so that the UFAS can determine if re-qualification of the Qualified Transfer Path is necessary.

3. Transfer Path Deletion

If there have been no Schedule reductions or USF Accommodations and the Actual Flow across a Qualified Transfer Path has not exceeded 97 percent of the Maximum Transfer Limit for the most recent 36 months, the UFAS shall make a determination as to whether the WECC system configuration has been altered sufficiently so that USF Schedule reductions or USF Accommodation on the Qualified Transfer Path would no longer be expected. An affirmative finding of the UFAS and approval by the WECC Operations Committee will be required to delete a Qualified Transfer Path.

4. Actions Required Following Addition of a New Qualified Transfer Path

a. A new Transfer Path will be added to the list of Qualified Transfer Paths, attached as Exhibit A, upon approval of the WECC Operations Committee.
b. Owners of facilities making up a Qualified Transfer Path will designate a Transfer Path Operator.
c. Incremental power flow matrices will be prepared for the current summer and winter seasons based on appropriately modified operating base cases for each Qualified Transfer Path and provided to the WECC Operations Committee members. The matrices will be based on an incremental schedule of 100 MW and express results in units of MW (equivalent to percent of individual Schedule). They will be used to determine the magnitude of each Contributing Schedule's contribution to USF. A "Contributing Schedule" is defined as the net Schedule between individual Senders and Receivers that contributes USF across a Qualified Transfer Path in the same direction as the Actual Flow across that Qualified Transfer Path.
d. The effectiveness factors and compensation for the Qualified Controllable Devices will be recalculated.

5. Controllable Device Qualification

a. Any Member wishing to qualify a Controllable Device to receive compensation for coordinated operation under the Plan shall present a plan for coordinated operation to the UFAS. This plan should include the following elements:
    i. The procedures developed to ensure that adequate communication and coordination occurs between the Member's Controllable Device and other Qualified Controllable Devices to achieve the desired coordination,
    ii. A demonstration that by adding the Member's Controllable Device to the overall coordinated Controllable Device control strategy, using the Controllable Devices Compensation Methodology (Attachment 3), the proposed Controllable Device will reduce USF:
        (1) by an average over all of the then Qualified Transfer Paths of at least one percent of the respective Qualified Transfer Path limits, (which corresponds to average percent control of 6.7 percent in Table I of Attachment 3), and

(2) for more than half of the Qualified Transfer Paths, by at least one percent of each of the respective Qualified Transfer Path limits.

b. After the UFAS has reviewed the documentation and presentation, it will make a recommendation to the WECC Operations Committee. Upon approval by the WECC Operations Committee, the proposed Controllable Device will be added to the list of Qualified Controllable Devices.

6. Controllable Device Deletion

a. A Qualified Controllable Device shall be deleted from the list of Qualified Controllable Devices if the Controllable Device is no longer capable of reducing USF over all of the then Qualified Transfer Paths by the criteria specified in Section 5.a above. The Controllable Device will no longer be required to participate in coordinated operation. However, its continued participation is encouraged.

7. Accommodation Limits

a. During normal operating conditions when Actual Flow is not exceeding the Transfer Limit and desired Schedules are not being curtailed, the Qualified Transfer Path(s) will accommodate 100 percent of the USF.

b. During those times when there is or it is anticipated that there will be a scheduling limitation on a Qualified Transfer Path due to USF, the Transfer Path Operator and those scheduling across the Qualified Transfer Path are required to accommodate a minimum level of USF. Such USF Accommodation will be achieved by ensuring that the net Schedules across the Qualified Transfer Path are reduced below the then available Transfer Limit by the following amount:

i. The greater of 50 MW or

(1) during the first Plan Year, 10 percent of the Transfer Limit;

(2) during the second Plan Year, 7.5 percent of the Transfer Limit; or

(3) during the third and subsequent Plan Years, 5 percent of the Transfer Limit.

c. If net Schedules are reduced below the Transfer Limit by the amounts specified above, then the Transfer Path Operator has met the USF Accommodation requirement and may request additional relief under the Plan, including coordinated operation of Qualified Controllable Devices, and Schedule curtailments by other Receivers who are scheduling across other Transfer Paths.

d. It is intended that the Qualified Controllable Devices shall not be requested to operate in a coordinated manner in response to requests under this USF Reduction Procedure in excess of 2000 hours per year, and if operation exceeds or is forecast to exceed that level, then the level of Transfer Path USF Accommodation shall be increased such that coordinated operation shall not exceed 2000 hours annually. The UFAS shall monitor the coordinated operation of the Qualified Controllable Devices and recommend to the WECC Operations Committee adjustments to the level of USF Accommodation as needed to meet this objective.

8. General Terms

a. All Members shall cooperate with the Transfer Path Operator by reducing Schedules as requested to achieve the appropriate reduction in USF. Schedule reductions required by this USF Reduction Procedure may be taken in either the Contributing Schedule, or any other Schedule, the reduction of which achieves the equivalent effect on reducing USF on the affected Transfer Path.

b. Members having Controllable Devices, such as series capacitors, phase shifting transformers, and DC transmission lines shall cooperate with the Transfer Path Operator to the extent practical by using these elements to reduce USF across the constrained Qualified Transfer Path. Operation of such Controllable Devices shall be required where the Controllable Devices are being operated in a coordinated manner pursuant to the Plan. Operation of Controllable Devices (which are not Qualified Controllable Devices) shall be at the discretion of and consistent with the normal practice of the Member. Schedule reductions shall not be required by the Member to the extent that controllable elements (which are not operated in a coordinated manner) are operated to achieve an equivalent reduction in USF across the constrained Qualified Transfer Path.

c. To the extent that a Qualified Controllable Device is capable of operating to achieve Actual Flows through the Controllable Device equal to Scheduled Flows, such Schedules shall be deemed to be 100 percent effective through the Controllable Device, and thus shall be exempt from the Schedule reductions required under this USF Reduction Procedure.

d. The WECC Staff will provide a summary of all qualified controllable elements, which are being operated in a coordinated manner pursuant to the Plan, whenever a new Controllable Device is qualified pursuant to the Plan. This summary shall be provided to the WECC Operations Committee.

9. General Action Rules

a. This procedure applies to all Members.

b. The UFAS shall develop guidelines to enable the Transfer Path Operators to implement actions under this USF Reduction Procedure, which will achieve the desired accommodation/control/curtailment results in the scheduling hour immediately following the request. Furthermore, these guidelines shall enable the Transfer Path Operators to make an initial request for any step in the procedure up through the NINTH STEP, provided however that the guidelines shall ensure that neither over-control nor over-curtailment shall be expected. Until such guidelines are developed, the following action limits shall apply:

   i. The Transfer Path Operator may request actions through the FOURTH STEP in the first hour if experience indicates that such action will be needed to achieve the required reduction in USF.

   ii. For requests beyond the FOURTH STEP, no more than three requests may be initiated in any clock hour. The notice must specify if this is an FIFTH, SIXTH, SEVENTH, EIGHTH, OR NINTH STEP request. The request must be transmitted to Members by at least 30 minutes prior to the hour to ensure implementation for the following Schedule hour.

c. The Transfer Path Operator will verify, if possible, the magnitude of USF across the Qualified Transfer Path by checking adjacent metered and scheduled values prior to requesting any other Member to take actions under this USF Reduction Procedure.

d. As to the actions to be taken in accordance with this Plan for each hour of a curtailment period, each Member shall promptly provide documentation of all such accommodation, control or curtailment actions taken by its dispatchers or real-time schedulers, and in addition each Transfer Path Operator shall provide such documentation on such actions taken or not taken by others in response to its requests, to the WECC Staff following each curtailment period. Members' documentation shall use formats and reporting conventions developed and monitored by the WECC Operations Committee. The compiled information, including identification of Members who failed to adjust Schedules according to this USF Reduction Procedure, shall be promptly distributed to the WECC Operations Committee members.

e. Operation of Qualified Controllable Devices will be monitored by the WECC Operations Committee for compliance with the Minimum Operating Reliability Criteria and the WECC Controllable Devices Coordinated Operating Procedure. Results will be distributed to the WECC Operations Committee members.

f. The WECC Operations Committee shall monitor major loop USF in a minimum of four locations during hours in which any USF Accommodation or coordinated operation of the Qualified Controllable Devices or curtailments are occurring under this USF Reduction Procedure.

g. The Transfer Path Operator and those scheduling across the constrained Qualified Transfer Path will continue to take actions necessary to reduce Actual Flow to a level at or below the Transfer Limit of the Qualified Transfer Path.

h. Upon receipt of a curtailment request, Contributing Schedules which are subject to curtailments will be reduced (or equivalent alternative Schedule adjustments will be effected) in accordance with the following procedures:

   i. Receivers of Contributing Schedules will initiate the requested Schedule reductions unless an otherwise agreed upon procedure for Schedule reduction achieving the equivalent effect on the Qualified Transfer Path is established by the Receiver and/or the Sender. If the ultimate Receiver is not a Member, then the curtailment administration responsibility shall first belong to the Member utility that has scheduling responsibility for the Receiver, and then to the Member utility that has control area responsibility for the Receiver.

   ii. Members may arrange among themselves to make curtailments called for by this USF Reduction Procedure in a manner other than prescribed provided that the arrangements are as effective as the identified Schedule curtailment in reducing USF across the Qualified Transfer Path. Members may make bilateral arrangements, which will enable a Member with Schedules on the affected Qualified Transfer Path to make the required curtailments in lieu of making larger curtailments in Schedules over other parallel paths. Where alternative Schedule adjustments are utilized, it is the Receiver's responsibility to cause Schedule adjustments to be effected which provide the same reduction in flow across the Qualified Transfer Path as would have been achieved by the prescribed reduction in the Contributing Schedule.

   iii. The total amount of requested Schedule reduction may be apportioned to the applicable Schedules at the discretion of the Receiver subject to item iv below.

iv. Irrespective of the Schedules reduced or the manner in which they are reduced, each Member's overall net reduction in Actual Flow across the constrained Qualified Transfer Path must be equivalent to the reduction which would have been achieved had the identified Schedule reduction occurred as requested.

v. System dispatchers or real-time schedulers should identify in advance those Schedules that qualify for curtailment requests for all Qualified Transfer Paths. This will expedite implementation of this USF Reduction Procedure when requested.

vi. While this USF Reduction Procedure does not expect Receivers to curtail Schedule, which would result in loss of firm load, nothing in this USF Reduction Procedure shall relieve the Receiver of the obligation to achieve the required reduction in USF across the constrained Qualified Transfer Path.

vii. In the event of a transmission system emergency on any Member's system, such Member may request coordinated operation of the Qualified Controllable Devices if such operation is reasonably expected to assist in relieving the emergency condition.

10. Action Steps

a. Action Taken by the Transfer Path Operator – Notification of Curtailment Period

i. The Transfer Path Operator shall advise the Members via the WECC communications system of a current or an impending curtailment period, and may request assistance in mitigating the curtailment using the following procedure:

The following actions shall become effective at the start of the next scheduling hour following the request.

b. Action Taken by the Transfer Path Operator – Controllable Devices

i. FIRST STEP: If the Qualified Transfer Path contains series connected Controllable Devices, such as series capacitors, phase shifting transformers, and DC transmission lines, these elements will be used to the maximum extent practical in reducing the USF across the constrained Qualified Transfer Path to a level at or below the Transfer Limit. Operations of such Controllable Devices shall comply with the WECC Minimum Operating Reliability Criteria.

c. Action Taken by the Transfer Path Operator - Accommodation

i. SECOND STEP: USF across a Qualified Transfer Path will be accommodated up to the greater of 50 MW or 10 percent of the Transfer Limit for that Qualified Transfer Path in the first Plan Year, 7.5 percent in the second Plan Year, and 5 percent in the third and subsequent Plan Years. USF Accommodation will be effected by the Transfer Path Operator causing the net Schedules across the Qualified Transfer Path to be reduced to not more than 90 percent of the Transfer Limit for that Qualified Transfer Path in the first Plan Year, 92.5 percent in the second Plan Year, and 95 percent in the third and subsequent Plan Years. The Transfer Path Operator shall not be expected to reduce net Schedules across the Qualified Transfer Path in this

step if they are already below the appropriate USF Accommodation level (90 percent, 92.5 percent, or 95 percent of the Transfer Limit).

d. Actions Taken by Controllable Device Owners

i. THIRD STEP: At the request of a Transfer Path Operator, the Qualified Controllable Device owners shall operate their Controllable Devices in a coordinated manner so as to minimize the USF on the constrained Qualified Transfer Path, consistent with the WECC Minimum Operating Reliability Criteria. If the constraint persists, then;

e. Actions Taken by Others and the Transfer Path Operator – Curtailment of Schedules.

i. FOURTH STEP: Those Receivers with Contributing Schedules that result in USF across the constrained Qualified Transfer Path of 50 percent or more will effect a scheduling change which is intended to reduce the USF across the Qualified Transfer Path by the same amount as would a 20 percent reduction in the Contributing Schedule. Those Receivers with Contributing Schedules that result in USF across the constrained Qualified Transfer Path of from 30 percent to 49 percent will effect a scheduling change which is intended to reduce the USF across the Qualified Transfer Path by the same amount as would a 10 percent reduction in the Contributing Schedule. If the overload persists, then;

ii. FIFTH STEP: Those Receivers with Contributing Schedules that result in USF across the constrained Qualified Transfer Path of from 20 through 29 percent will effect a scheduling change which is intended to reduce the USF across the Qualified Transfer Path by the same amount as would a 10 percent reduction in the Contributing Schedule, and Receivers with Contributing Schedules that result in USF across the constrained Qualified Transfer Path of 30 percent or more will effect a scheduling change which is intended to reduce the USF across the Qualified Transfer Path by the same amount as would an additional 5 percent reduction in the Contributing Schedule. If the overload persists, then;

iii. SIXTH STEP: USF Accommodation on the Qualified Transfer Path will increase to the greater of 75 MW or 11 percent of the Transfer Limit for that Qualified Transfer Path in the first Plan Year, 8.5 percent in the second Plan Year, and 6 percent in the third and subsequent Plan Years. Contributing Schedules will continue to be curtailed as described up through the FIFTH STEP. If the overload persists, then;

iv. SEVENTH STEP: Those Receivers with Contributing Schedules that result in USF across the constrained Qualified Transfer Path of from 15 through 19 percent will effect a scheduling change which is intended to reduce the USF across the Qualified Transfer Path by the same amount as would a 10 percent reduction in the contributing Schedule, and Receivers with Contributing Schedules that result in USF across the constrained Qualified Transfer Path of 20 percent or more will effect a scheduling change which is intended to reduce the USF across the Qualified Transfer Path by the same amount as would an additional 5 percent reduction in the Contributing Schedule.

v. EIGHTH STEP: USF Accommodation on the Qualified Transfer Path will increase to the greater of 100 MW or 12 percent of the Transfer Limit for that Qualified Transfer Path in the first Plan Year, 9.5 percent in the second Plan Year, and 7 percent in the third and subsequent Plan Years. Contributing

Schedules will continue to be curtailed as described up through the SEVENTH STEP. If the overload persists, then;

vi. NINTH STEP: Those Receivers with Contributing Schedules that result in USF across the constrained Qualified Transfer Path of from 10 to 14 percent will effect a scheduling change which is intended to reduce the USF across the Qualified Transfer Path by the same amount as would a 10 percent reduction in the Contributing Schedule, and Receivers with Contributing Schedules that result in USF across the constrained Qualified Transfer Path of 15 percent or more will effect a scheduling change which is intended to reduce the USF across the Qualified Transfer Path by the same amount as would an additional 5 percent reduction in the Contributing Schedule.

11. Further Action

a. The Transfer Path Operator and those scheduling across the constrained Qualified Transfer Path will continue to take actions necessary to reduce Actual Flow to a level at or below the Transfer Limit.

b. The Transfer Path Operator and those scheduling across the Qualified Transfer Path may resume some Schedules as curtailment steps are taken by others provided the net Schedule remains at or below the amount that provides for USF Accommodation at the level specified above for the Qualified Transfer Path.

c. The Transfer Path Operator must reconfirm the need to continue the present level of Schedule reductions via the WECC communications system every four hours by at least 30 minutes to the hour.

d. The Transfer Path Operator must notify Members via the WECC communications system to reduce Schedule curtailments when the Actual Flow on the Qualified Transfer Path is reduced below 97 percent of its Transfer Limit or the USF Accommodation levels above are no longer being exceeded. Schedules should be resumed in the reverse order that Schedule curtailments were initiated. If conditions warrant, the Transfer Path Operator may notify all Members to cease all curtailments at any time.

12. Term

This procedure will remain in effect coterminous with the Plan.

Revised: February 10, 1994

WECC UNSCHEDULED FLOW PROCEDURE
SUMMARY OF CURTAILMENT ACTIONS

Step	Action Description	Party(s) Affected	Unscheduled Flow Accommodation across Path (First Contract Year/Second Contract Year/Third and subsequent Contract Years)	Equivalent Percent Curtailment Required in Contributing Schedule -Based on amount of Unscheduled Flow across Path				
				10-14%	15-19%	20-29%	30-49%	50+ %
1	Operate controllable devices in Path	Controllable devices in transfer Path	NA					
2	Accommodation	Schedules across the Path	50 MW or 10%/7.5%/5% of maximum transfer limit					
3	Coordinated operation of qualified controllable devices	Qualified controllable devices	50 MW or 10%/7.5%/5% of maximum transfer limit					
4	First level curtailment	Schedules in other paths	50 MW or 10%/7.5%/5% of maximum transfer limit				10%	20%
5	Second level curtailment	Schedules in other paths	50 MW or 10%/7.5%/5% of maximum transfer limit			10%	15%	25%
6	Accommodation	Schedules across Path	75 MW or 11%/8.5%/6% of maximum transfer limit			10%	15%	25%
7	Third level curtailment	Schedules in other paths	75 MW or 11%/8.5%/6% of maximum transfer limit		10%	15%	20%	30%
8	Accommodation	Schedules across Path	100 MW or 12%/9.5%/7% of maximum transfer limit		10%	15%	20%	30%
9	Fourth level curtailment	Schedules in other paths	100 MW or 12%/9.5%/7% of maximum transfer limit	10%	15%	20%	25%	35%

Item 6. Existing NERC TLR Procedures

Action

Discussion.

Attachments

- Appendix 9C1, "NERC TLR Procedure"
- Appendix 9C1B, "Interchange Transaction Reallocation During TLR Levels 3a and 5a"
- Appendix 9C1C, "Interchange Transaction Curtailments During TLR Level 3b"

Note: The NERC staff, Operating Reliability Subcommittee, and Version 0 Drafting Team highlighted these three appendixes to show areas of business practices.

- Parallel Flow Calculation Procedure Reference Document
- Flowgate Administration Reference Document
- Reliability Coordinator Reference Document
- Standard IRO-006-0 — Reliability Coordination – Transmission Loading Relief

Background

Before the NERC Version 0 Standard Drafting Team began its work, the NERC staff and Operating Committee subcommittees reviewed the current operating policies and marked those areas that were potentially business practices. The subcommittees and drafting team believe the three appendixes devoted to the NERC TLR Procedure from TLR 2 through TLR 5b are almost exclusively business practices. This isn't surprising given the Operating Reliability Subcommittee's (and its predecessors) many meetings that were mostly dedicated to the intricacies of transaction curtailment procedures.

The Reliability Coordinator issues a TLR 1 as an alert, TLR 6 to initiate emergency procedures, and TLR 0 to denote the conclusion of a TLR declaration.

Related documents. Four other documents are also attached that the subcommittee needs to review:

1. **Parallel Flow Calculation Procedure Reference Document.** Explains how curtailments of firm point-to-point service are curtailed comparable to those using firm network service and service to native load.

2. **Flowgate Administration Reference Document.** Explains how Reliability Coordinators can add, modify, and remove flowgates from the Interchange Distribution Calculator (IDC).

3. **Reliability Coordinator Reference Document.** Currently includes two parts: 1.) System Data Exchange updates to the IDC, and 2.) TLR 6 declarations.

5. **Standard IRO-006-0, "Reliability Coordination – Transmission Loading Relief."** The Version 0 reliability standard that is based on the three TLR appendixes.

Appendix 9C1
Transmission Loading Relief Procedure – Eastern Interconnection

Business Practices in Yellow Highlight

Version 2b

[Appendix 9C1B, "Interchange Transaction Reallocation During TLR Levels 3a and 5a"]
[Appendix 9C1C, "Interchange Transaction Curtailments During TLR 3b"]
["Parallel Flow Calculation Procedure Reference Document"]

Appendix Subsections

A. General Requirements
B. Transmission Loading Relief (TLR) Levels
C. Interchange Transaction Curtailment Order
D. Transaction Management and Curtailment Process
E. Principles for Mitigating Constraints On and Off the Contract Path
F. Transaction Contribution Factor Calculation
G. Transaction Curtailment Formula
H. NERC Transmission Loading Relief Procedure Event Log

Terms

Transaction Reallocation (or Reallocation). The total or partial curtailment of TRANSACTIONS during TLR Level 3a or 5a to allow TRANSACTIONS using higher priority TRANSMISSION SERVICE to be implemented.

Curtailment Threshold. The minimum TRANSFER DISTRIBUTION FACTOR which, if exceeded, will subject an INTERCHANGE TRANSACTION to curtailment to relieve a transmission facility CONSTRAINT.

Introduction

The purpose of 9C1, as stated in the Introduction is both commercial and reliability.

Commercial aspects highlighted in yellow.

The NERC Transmission Loading Relief (TLR) Procedure is an EASTERN INTERCONNECTION-wide procedure to allow the RELIABILITY ~~COORDINATORS~~ AUTHORITIES to:

1. Respect TRANSMISSION SERVICE reservation priorities, and
2. Mitigate potential or actual **SYSTEM OPERATING LIMIT (SOL)** and **INTERCONNECTION RELIABILITY OPERATING LIMIT (IROL)**~~OPERATING SECURITY LIMIT~~ violations.

Transmission Provider Obligations

NERC recognizes that TRANSMISSION PROVIDERS are subject to obligations under FERC-approved tariffs or other agreements, and nothing in these procedures shall be interpreted as changing those obligations. This Appendix uses the term "transmission reservation" to mean transmission arranged under the FERC pro forma tariff as well as under other transmission agreements.

Relationship between TLR Procedure and FERC pro forma Tariff

The TLR Procedure has been incorporated into the transmission tariff of many TRANSMISSION PROVIDERS, and is on file with the Federal Energy Regulatory Commission. The TLR Procedure follows the curtailment provisions of the pro forma tariff with regards to Non-firm and Firm Point-to-Point Transmission Service, and Network Integration Transmission Service.

TLR Procedure curtails Transactions. The pro forma tariff's curtailment provision addresses the curtailment of the *transmission service* over the CONSTRAINED FACILITIES, not curtailment of the generation product being sold via that service. The tariff does not consider the effect of the curtailment on the load-serving entity; instead, it considers the obligations of the TRANSMISSION PROVIDER(S) in providing or curtailing the Transmission Service. The NERC TLR Procedure translates the curtailment of the Transmission Service into a curtailment of the actual MW flow over the constraint.

Considerations for Firm Point-to-Point Transmission Service.

Transactions using Firm Point-to-Point Transmission Service are afforded the highest priority. Therefore, in many situations, the TLR Procedure will allow these Transactions to start during the implementation of a TLR 2, 3a, 3b, and 4. Please refer to **Sections B.2. through B.5**. and "**Appendix 9C1C – Interchange Transaction Curtailments During TLR Level 3b**" for details.

Re-dispatch considerations. Regarding the curtailment of transmission use by Firm Point-to-Point Transmission Service, the TLR Procedure follows the Federal Energy Regulatory Commission's pro forma tariff that TRANSMISSION PROVIDERS are not obligated to re-dispatch their own resources to maintain TRANSACTIONS using Firm Point-to-Point Transmission Service before they are curtailed on a pro-rata basis with transmission use for Network Integration Transmission Service and Native Load.

Curtailment of Service to Network and Native Load customers. The TLR Procedure includes the calculation of the Transaction Contribution Factor (TCF), which determines the portion of the CONSTRAINED FACILITY'S loading due to Firm Point-to-Point Transmission Service. This is one part of the calculation that the RELIABILITY ~~COORDINATOR~~ AUTHORITY must perform to ensure that this curtailment is comparable and non-discriminatory with the curtailment of Network Integration Transmission Service and Transmission Service for Native Load. **(See Section F, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service")**

Summary of TLR Levels

TLR Level	RELIABILITY ~~COORDINATOR~~ AUTHORITY Action	Comments	
1	**Notify** RELIABILITY ~~COORDINATORS~~ AUTHORITIES of potential OPERATING SECURITY LIMIT violations		**System Secure**
2	**Hold** INTERCHANGE TRANSACTIONS at current levels to prevent SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ violations	Of those transactions at or above the CURTAILMENT THRESHOLD, only those under existing Transmission Service reservations will be allowed to continue, and only to the level existing at the time of the hold. Transactions using Firm Point-to-Point Transmission Service are not held. See Section B.1.	
3a	**Reallocation** Transactions using Non-firm Point-to-Point Transmission Service are curtailed to allow Transactions using higher priority Point-to-Point Transmission Service	Curtailment follows Transmission Service priorities. Higher priority transactions are enabled to start by the REALLOCATION process. See Section B.3.	
3b	**Curtail** Transactions using Non-firm Point-to-Point Transmission Service to mitigate SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~Operating Security Limit~~ Violations	Curtailment follows Transmission Service priorities. There are special considerations for handling Transactions using Firm Point-to-Point Transmission Service. See Section B.4.	**Security Limit Violation**
4	**Reconfigure** transmission system to allow Transactions using Firm Point-to-Point Transmission Service to continue	There may or may not be an INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ violation. There are special considerations for handling Transactions using Firm Point-to-Point Transmission Service. See Section B.5.	
5a	**Reallocation** Transactions using Firm Point-to-Point Transmission Service are curtailed (pro rata) to allow new Transactions using Firm Point-to-Point Transmission Service to begin (pro rata).	Attempts to accommodate all Transactions using Firm Point-to-Point Transmission Service, though at a reduced ("pro rata") level. Pro forma tariff also requires curtailment / REALLOCATION on pro rata basis with Network Integration Transmission Service and Native Load. See Section B.6.	**System Secure**
5b	**Curtail** Transactions using Firm Point-to-Point Transmission Service to mitigate **SYSTEM OPERATING LIMIT or** INTERCONNECTION RELIABILITY OPERATING LIMIT~~Operating Security Limit~~ Violations	Pro forma tariff requires curtailment on pro rata basis with Network Integration Transmission Service and Native Load. See Section B.7.	**Security Limit Violation**
6	**Emergency Action**	Could include demand-side management, re-dispatch, voltage reductions, interruptible and firm load shedding. See Section B.8.	
0	**TLR Concluded**	**Restore** transactions. See Section B.9.	**System Secure**

Unless explained otherwise, "curtailment" refers to those INTERCHANGE TRANSACTIONS whose DISTRIBUTION FACTOR on the CONSTRAINED FACILITY exceeds the CURTAILMENT THRESHOLD.

Posting TLR Events

When the RELIABILITY ~~COORDINATOR~~ AUTHORITY initiates the TLR Procedure, he will notify all other RELIABILITY ~~COORDINATORS~~ AUTHO~~RITIES~~ via the ~~RCIS~~RAIS[1]. Furthermore, the TLR Level will be posted to the appropriate NERC web

Posting TLR Events is a duplicate of a section in General Requirements. This one in the Intro should be deleted.

Notification – TLR Level 1

This Level is an alert to inform the marketplace and other RELIABILITY ~~COORDINATORS~~ AUTHORITIES that curtailments are likely to occur. The RELIABILITY ~~COORDINATOR~~ AUTHORITY should announce a TLR 0 once the Notification level is no longer necessary.

Hold – TLR Level 2

If a~~n~~ SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ violation is imminent, the RELIABILITY ~~COORDINATOR~~ AUTHORITY shall direct his ~~CONTROL AREAS~~BALANCING AUTHORITIES to maintain INTERCHANGE TRANSACTIONS such that, of those transactions that are at or above the CURTAILMENT THRESHOLD, only those under existing Transmission Service reservations will be allowed to continue, and only to the level existing at the time of the hold. During TLR Level 2, the RELIABILITY ~~COORDINATOR~~ AUTHORITY will allow existing INTERCHANGE TRANSACTIONS to increase, or new INTERCHANGE TRANSACTIONS to begin, if they help mitigate the CONSTRAINT. TRANSACTIONS using Firm Point-to-Point Transmission Service will be allowed to start.

TLR Level 2 is a transient state, which requires a quick decision to proceed to higher TLR Levels (3 and above) to allow INTERCHANGE TRANSACTIONS to be implemented according to their transmission reservation priority. The time for being in TLR Level 2 should be no more than 30 minutes, with the understanding that there may be circumstances where this time may be exceeded. If the time in TLR Level 2 exceeds 30 minutes, the RELIABILITY ~~COORDINATOR~~ AUTHORITY must document this action on the TLR Log. When faced with a new INTERCHANGE TRANSACTION using higher priority Point-to-Point Transmission Service, the RELIABILITY ~~COORDINATOR~~ AUTHORITY **must immediately proceed to TLR Level 3a** to curtail those INTERCHANGE TRANSACTIONS using lower priority Point-to-Point Transmission Service. He must give preference to those INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service, followed by those using higher priority Non-firm Point-to-Point Transmission Service. The RELIABILITY ~~COORDINATORS~~ AUTHORITIES shall monitor and coordinate the timing of the curtailment and reallocation process.

[1] We are using the term Reliability ~~Coordinator~~ Authority Information System (~~RCIS~~RAIS) in this Appendix in the general sense for whatever information system that has been established for disseminating TLR information. In some cases, it could actually be the Interchange Distribution Calculator system.

Curtailing – TLR Levels 3a, 3b, 5a, 5b

Curtailments are required for two reasons:

1. To allow an INTERCHANGE TRANSAC[illegible]e to begin when it would otherwise cause a SYST[illegible]NNECTION RELIABILITY OPERATING LIMIT~~OPER~~[illegible]cation" – TLR Level 3a, and 5a), and

2. To mitigate an imminent or existing S[illegible] INTERCONNECTION RELIABILITY OPERATING LIMIT ~~OPERATING SECURITY LIMIT~~ Violation (TLR Level 3b and 5b). [2]

While this deals with business practices, it is fundamentally a lead-in to both reliability and business practices and needs to be kept in both to maintain context.

Should curtailment become necessary by using TLR 3b or 5b to mitigate a potential or actual SYSTEM OPERATING LIMIT VIOLATION or INTERCONNECTION RELIABILITY OPERATING LIMIT ~~OPERATING SECURITY LIMIT~~ violation, INTERCHANGE TRANSACTIONS whose Transfer Distribution Factors (TDF) across the specific CONSTRAINED FACILITY are at or above the CURTAILMENT THRESHOLD shall be curtailed whenever practicable on a proportional basis and according to these Procedures as explained in **Section G, "Transaction Curtailment Formula**." The order of INTERCHANGE TRANSACTION curtailment is explained in **Section C., "Interchange Transaction Curtailment Order."** Some TRANSACTIONS using Firm Point-to-Point Transmission Service will be allowed to start during TLR 3b. See **Section B, "Transmission Loading Relief (TLR) Levels," and Appendix 9C1C, "Interchange Transaction Curtailments During TLR Level 3b,"** for details.

These curtailments will remain in effect until such time as the CONSTRAINT has been mitigated, allowing the INTERCHANGE TRANSACTIONS to be restored.

Reconfiguration – TLR Level 4

Before the RELIABILITY ~~COORDINATOR~~ AUTHORITY orders curtailment of INTERCHANGE TRANSACTIONS using Firm Point-to-Point TRANSMISSION SERVICE (TLR Level 5a or 5b), he will request the TRANSMISSION ~~PROVIDERS~~ OPERATORS in his RELIABILITY AREA to attempt to reconfigure their transmission systems to allow the INTERCHANGE TRANSACTIONS to continue. Transmission reconfiguration may be implemented as long as it does not jeopardize the operating security of the INTERCONNECTION. Transactions using Non-firm Point-to-Point Transmission Service will be curtailed or held from starting. Some Transactions using Firm Point-to-Point Transmission Service will be allowed to start. See **Section B, "Transmission Loading Relief (TLR) Levels,**" and **Section F, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service**" for details.

Emergency Procedures – TLR Level 6

If the RELIABILITY ~~COORDINATOR~~ AUTHORITY is unable to mitigate the CONSTRAINT through the use of TLR Levels 3, 4, or 5, then he has the authority to immediately direct the ~~CONTROL AREAS~~BALANCING AUTHORITIES and TRANSMISSION OPERATORS to take actions such as re-dispatch generation, reconfigure transmission, or reduce load to mitigate the critical condition until INTERCHANGE TRANSACTIONS can be reduced utilizing the TLR **Interchange Transaction Curtailment Order**, or other methods, to return the

[2] This includes mitigation of contingency overloads.

system to a reliable state. All BALANCING AUTHORITIES and TRANSMISSION OPERATORS~~CONTROL AREAS~~ shall comply with all requests from their RELIABILITY ~~COORDINATOR~~AUTHORITY. However, the BALANCING AUTHORITIES and TRANSMISSION OPERATORS~~CONTROL AREA operator~~ should immediately notify his RELIABILITY ~~COORDINATOR~~ AUTHORITY if the RELIABILITY ~~COORDINATOR'S~~ AUTHORITY'S request is unclear or would seem to cause an operating problem.

Return to Normal Operations – TLR Level 0

The RELIABILITY ~~COORDINATOR~~ AUTHORITY that is experiencing the CONSTRAINT within its RELIABILITY AREA shall notify all RELIABILITY ~~COORDINATORS~~ AUTHORITIES via the ~~RCIS~~ RAIS when the adverse conditions are mitigated and the system is in a "normal" state.

Considerations for Constraints On and Off the Contract Path

Interchange Transaction Priority **ON** the Contract Path

If the CONSTRAINED FACILITY is on the contract path, the curtailment priority will be equal to the TRANSMISSION SERVICE priority of the link on which the CONSTRAINED FACILITY is located. **[Section E., "Principles for Mitigating Constraints On and Off the Contract Path"]**

Interchange Transaction Priority **OFF** the Contract Path

If the CONSTRAINED FACILITY is not on the contract path of the INTERCHANGE TRANSACTION, the curtailment priority will be equal to the *lowest* Transmission Service priority of the links on the contract path. (This means 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.)

Re-dispatch and Other Congestion Management Options

Some TRANSMISSION PROVIDERS offer re-dispatch or other congestion management options that allow a Transmission Customer to mitigate the effect of its INTERCHANGE TRANSACTION on the CONSTRAINED FACILITY. If the Transmission Customer elects to use such an option, the RELIABILITY ~~COORDINATOR~~ AUTHORITY must treat the INTERCHANGE TRANSACTION accordingly in the curtailment scheme. (Note: "Local" congestion management procedures require approval by NERC if they are to be used in lieu of the TLR Procedure prescription. See Policy 9.C. Requirement 3.2.1.1.)

A. General Requirements

1. **Initiation only by RELIABILITY ~~COORDINATOR~~AUTHORITY.** The NERC Transmission Loading Relief Procedure may be initiated only by a RELIABILITY ~~COORDINATOR~~ AUTHORITY at 1) the RELIABILITY ~~COORDINATOR'S~~ AUTHORITY'S own request, or 2) upon the request of a TRANSMISSION ~~PROVIDER~~ OPERATOR ~~or CONTROL AREA~~BALANCING AUTHORITY~~~.

2. **Mitigating transmission constraints.** The TLR Procedure may be used to mitigate potential or actual SYSTEM OPERATING LIMIT VIOLATIONS or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ violations on any transmission facility modeled in the INTERCHANGE DISTRIBUTION CALCULATOR. **[See also Section 6.1, "Interchange Transactions not in the IDC.]**

   2.1. **Requesting relief on tie facilities.** Any TRANSMISSION ~~PROVIDER~~ OPERATOR ~~or CONTROL AREA~~BALANCING AUTHORITY ~~~ who operates the tie facility may request relief from its RELIABILITY ~~COORDINATOR~~AUTHORITY.

   Is reference to BA in 2.1 appropriate?

      2.1.1. **INTERCHANGE TRANSACTION priority on tie facilities.** The priority of the INTERCHANGE TRANSACTION(S) to be curtailed is determined by the Transmission Service reserved on the **TRANSMISSION ~~PROVIDER'S OPERATOR'S (?)~~SERVICE PROVIDER'S** system who requested the relief.

3. **Order of TLR Levels and taking emergency action.** The RELIABILITY ~~COORDINATOR~~AUTHORITY may not necessarily follow the TLR Levels in their numerical order (**See Section B, "TLR Levels"**). Furthermore, if a RELIABILITY ~~COORDINATOR~~AUTHORITY deems that a transmission loading condition could jeopardize bulk system reliability, the RELIABILITY ~~COORDINATOR~~AUTHORITY has the authority to enter TLR Level 6 directly, and immediately direct the ~~CONTROL AREAS~~BALANCING AUTHORITIES or TRANSMISSION OPERATORS to take such actions as re-dispatch generation, or reconfigure transmission, or reduce load to mitigate the critical condition until INTERCHANGE TRANSACTIONS can be reduced utilizing the TLR Transaction Curtailment Procedures, or other methods, to return the system to a secure state.

4. **Notification of TLR Procedure implementation.** The RELIABILITY ~~COORDINATOR~~AUTHORITY initiating the use of the TLR Procedure must notify other RELIABILITY ~~COORDINATORS~~ AUTHORITIES and BALANCING AUTHORITIES and TRANSMISSION OPERATORS~~CONTROL AREAS~~, and must post the initiation and progress of the TLR event on the appropriate NERC web page(s).

   4.1. **Notifying other RELIABILITY ~~COORDINATORS~~AUTHORITIES.** The RELIABILITY ~~COORDINATOR~~AUTHORITY initiating the TLR Procedure shall inform all other RELIABILITY ~~COORDINATORS~~ AUTHORITIES via the RELIABILITY ~~COORDINATOR~~AUTHORITY Information System (~~RCIS~~RAIS) that the TLR Procedure has been implemented.

      4.1.1. **Actions expected.** The RELIABILITY ~~COORDINATOR~~AUTHORITY initiating the TLR Procedure shall indicate the actions expected to be taken by other RELIABILITY ~~COORDINATORS~~AUTHORITIES. **[See also: Policy 3B and 3D for**

Review title of 3B and 3D.

CONTROL AREA Requirements during curtailments.]

4.2. Notifying TRANSMISSION ~~PROVIDERS~~ OPERATORS and ~~CONTROL AREAS~~BALANCING AUTHORITIES. RELIABILITY ~~COORDINATORS~~ AUTHORITIES must keep the TRANSMISSION ~~PROVIDERS~~ OPERATORS and ~~CONTROL AREAS~~BALANCING AUTHORITIES in his RELIABILITY AREA informed when entering and leaving any TLR level.

4.3. Notifying BALANCING AUTHORITIES~~Control Areas~~. The RELIABILITY ~~COORDINATOR~~AUTHORITY for the SINK BALANCING AUTHORITY~~CONTROL AREA~~ is responsible for directing that BALANCING AUTHORITY~~CONTROL AREA~~ to curtail the INTERCHANGE TRANSACTIONS as specified by the RELIABILITY ~~COORDINATOR~~AUTHORITY implementing the TLR Procedure. **[See Policy 3.D. for Control Area curtailment notification details.]**

4.3.1. Notification order. Within a Transmission Service priority level, the SINK BALANCING AUTHORITIES~~CONTROL AREAS~~ whose INTERCHANGE TRANSACTIONS have the largest impact on the CONSTRAINED FACILITIES shall be notified first if practicable.

4.4. Updates. At least once each hour, or when conditions change, the RELIABILITY ~~COORDINATOR~~AUTHORITY implementing the TLR Procedure shall update all other RELIABILITY ~~COORDINATORS~~ AUTHORITIES (via the ~~RCIS~~RAIS). TRANSMISSION ~~PROVIDERS~~ OPERATORS and BALANCING AUTHORITIES~~CONTROL AREAS~~ who have had Interchange Transactions impacted by the TLR will be updated by their RELIABILITY ~~COORDINATOR~~AUTHORITY.

5. Obligations. All RELIABILITY ~~COORDINATORS~~ AUTHORITIES ~~must~~ shall comply with the request of the RELIABILITY ~~COORDINATOR~~AUTHORITY who initiated the TLR Procedure, unless the initiating RELIABILITY ~~COORDINATOR~~AUTHORITY agrees otherwise.

5.1. Use of TLR Procedure with "local" procedures. A RELIABILITY ~~COORDINATOR~~AUTHORITY may implement a local transmission loading relief or congestion management procedure simultaneously with an INTERCONNECTION-wide procedure. However, he is obligated to follow the curtailments as directed by the INTERCONNECTION-wide procedure. If the RELIABILITY ~~COORDINATOR~~AUTHORITY desires to use a local procedure as a substitute for curtailments as directed by the INTERCONNECTION-wide procedure, he may do so only if such use is approved by the NERC Operating Reliability Subcommittee and Operating Committee.[3]

5.1, 6.2 and 6.3 are both Reliability and Business Practices.

We think the Reliability aspect is most important. RA's must be able to depend on the efficacy of the actions taken by other RA's, must accommodate elements not modeled in the congestion management tools and must always do the right thing for reliability, despite problems with the congestion management tools.

6. Consideration of Interchange Transactions. The administration of the TLR Procedure is

[3] Examples would be 1) a local procedure that curtails INTERCHANGE TRANSACTIONS in a different order or ratio than the INTERCONNECTION-wide procedure, or 2) a local re-dispatch procedure.

guided by information obtained from the Interchange Distribution Calculator (IDC).

6.1. **Interchange Transactions not in the IDC.** RELIABILITY ~~COORDINATORS~~ AUTHORITIES shall also treat known INTERCHANGE TRANSACTIONS that may not appear in the IDC in accordance with the procedures in this document.

6.2. **Transmission elements not in IDC.** When a RELIABILITY ~~COORDINATOR~~AUTHORITY is faced with an overload on a transmission element that is not modeled in the IDC, the RELIABILITY ~~COORDINATOR~~AUTHORITY shall use the best information available to curtail INTERCHANGE TRANSACTIONS in order to operate the system in a reliable manner. The RELIABILITY ~~COORDINATOR~~AUTHORITY shall use his 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.

6.3. **Questionable IDC results.** Any RELIABILITY ~~COORDINATOR~~AUTHORITY (or TRANSMISSION ~~PROVIDER~~ OPERATOR through his RELIABILITY ~~COORDINATOR~~AUTHORITY) who believes the curtailment list from the IDC for a particular TLR event is incorrect shall use his 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~~AUTHORITY. 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 constrain
- Curtailment that would initiate a constraint elsewhere.

The RA won't worry about the transaction order on the cut list - is a business practice. But it is concerned with making sure that congestion management tool is producing reliable results.

If other RELIABILITY ~~COORDINATORS~~ AUTHORITIES are involved in the TLR event, agreement must be reached with the initiating RELIABILITY ~~COORDINATORS~~ AUTHORITIES on any adjustments to the curtailment list.

6.4. **Curtailment that would cause a constraint elsewhere.** If the RELIABILITY ~~COORDINATOR~~AUTHORITY is aware that an INTERCHANGE TRANSACTION curtailment directed by the IDC would cause a constraint to occur elsewhere, after consulting with those RELIABILITY ~~COORDINATORS~~ AUTHORITIES who initiated the curtailment, he may exempt that INTERCHANGE TRANSACTION from curtailment.

6.5. **Re-dispatch options.** The RELIABILITY ~~COORDINATOR~~AUTHORITY shall ensure that INTERCHANGE TRANSACTIONS that are linked to re-dispatch options are protected from curtailment in accordance with the re-dispatch provisions. **[See also: Policy 9C. Req. 3.2.1.1 on use of local procedures.]**

6.6. **Reallocation.** During a TLR Level 3A, TRANSACTIONS of higher priority that meet the Approved-tag Submission Deadline for Reallocation will be considered for REALLOCATION **(see Appendix 9C1B, "Interchange Transaction Reallocation During TLR Levels 3a and 5a.")** During a TLR Level 5A, TRANSACTIONS using Firm

Transmission Service will considered for REALLOCATION be if they have met the same tag submission deadlines.

7. **IDC updates.** Any INTERCHANGE TRANSACTION adjustments or curtailments that result from using this Procedure must be entered into the IDC as explained in Policy 9.C. Requirement 1.1.

8. **Logging.** The RELIABILITY ~~COORDINATOR~~AUTHORITY shall complete the NERC Transmission Loading Relief Procedure Log (**Section I**) whenever he invokes TLR Level 2 or above, and send a copy of the log via e-mail to the NERC staff within two business days of the TLR event. The staff will post these logs on the NERC web site upon receipt.

The TLR log is now an automatic process.

This report log is being automated and this language will be revised if needed.

9. **TLR Event Review.** The RELIABILITY ~~COORDINATOR~~AUTHORITY shall report the TLR event to the NERC Market ~~Interface~~ Committee and Operating Reliability Subcommittee in accordance with TLR review processes established by NERC as required.

9.1. **Providing information**. ~~CONTROL AREAS~~TRANSMISSION OPERATORS and BALANCING AUTHORITIES within the RELIABILITY ~~COORDINATOR~~AUTHORITY'S RELIABILITY AREA, and all other RELIABILITY ~~COORDINATORS~~AUTHORITIES, including TRANSMISSION OPERATORS and BALANCING AUTHORITIES~~CONTROL AREAS~~ within their respective RELIABILITY AREAS, shall provide information, as requested by the initiating RELIABILITY ~~COORDINATOR~~AUTHORITY, in accordance with TLR review processes established by NERC.

9.2. **Market ~~Interface~~ Committee reviews.** The Market ~~Interface~~ 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.

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

B. Transmission Loading Relief (TLR) Levels

Introduction

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~~AUTHORITY 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. **(Section E., "Principles for Mitigating Constraints On and Off the Contract Path")** It is important to note, as explained in the Introduction, 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.

TLR Levels

1. TLR Level 1 – Notify RELIABILITY ~~COORDINATORS~~ AUTHORITIES of potential SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~Operating Security Limit~~ Violations.

1.1. Circumstances:

- The transmission system is secure.
- The RELIABILITY ~~COORDINATOR~~AUTHORITY foresees a transmission or generation contingency or other operating problem within his RELIABILITY AREA that could cause one or more transmission facilities to approach or exceed their **SYSTEM OPERATING LIMIT** or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~.

1.2. Notification procedures. The RELIABILITY ~~COORDINATOR~~AUTHORITY shall notify all RELIABILITY ~~COORDINATORS~~ AUTHORITIES via the Reliability ~~Coordinator~~Authority Information System as soon as the condition is foreseen. All affected RELIABILITY ~~COORDINATORS~~ AUTHORITIES shall check to ensure that INTERCHANGE TRANSACTIONS are posted in the INTERCHANGE DISTRIBUTION CALCULATOR.

2. TLR Level 2 – Hold transfers at present level to prevent ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~Operating Security Limit~~ Violations

2.1. Circumstances for entering this level:

- The transmission system is secure,
- One or more transmission facilities are expected to approach, or are approaching, or are at their ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~.

2.2. **Holding procedures**. The RELIABILITY ~~COORDINATOR~~AUTHORITY may hold the implementation of any additional INTERCHANGE TRANSACTIONS that are at or above the CURTAILMENT THRESHOLD. However, the RELIABILITY ~~COORDINATOR~~AUTHORITY should allow additional INTERCHANGE TRANSACTIONS that flow across the CONSTRAINED FACILITY if their flow reduces the loading on the Constrained Facility or has a Transfer Distribution Factor less than the CURTAILMENT THRESHOLD. All INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service will be allowed to start.

Treatment of Firm Transactions.

2.2.1. TLR Level 2 is a transient state, which requires a quick decision to proceed to higher TLR Levels (3 and above) to allow INTERCHANGE TRANSACTIONS to be implemented according to their transmission reservation priority. The time for being in TLR Level 2 should be no more than 30 minutes, with the understanding that there may be circumstances where this time may be exceeded. If the time in TLR Level 2 exceeds 30 minutes, the RELIABILITY ~~COORDINATOR~~AUTHORITY must document this action on the TLR Log.

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.

3.1. Circumstances for entering this level:

- The transmission system is secure
- One or more transmission facilities are expected to approach, or are approaching, or are at their ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~
- 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. (See **Section 3.2** below)

3.2. **Reallocation procedures to allow INTERCHANGE TRANSACTIONS using higher priority Point-to-Point Transmission Service to start.** The RELIABILITY ~~COORDINATOR~~AUTHORITY with the constraint shall give preference to those INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service, followed by those using higher priority Non-firm Point-to-Point Transmission Service as specified in **Section C. "Interchange Transaction Curtailment Order."** INTERCHANGE TRANSACTIONS that have been held or curtailed as prescribed in this Section shall be reallocated (reloaded) according to their Transmission Service priorities when operating conditions permit. The specifications for performing this Reallocation, as well as the Tagging requirements, are found in **Appendix 9C1B, "Interchange Transaction Reallocation During TLR Level 3a and 5a**."

3.2.1. INTERCHANGE TRANSACTIONS using higher priority Non-firm or Firm Transmission Service will displace INTERCHANGE TRANSACTIONS with lower priority Transmission Service.

3.2.2. INTERCHANGE TRANSACTIONS using Non-firm Transmission Service will not be curtailed to allow the start or increase of another INTERCHANGE TRANSACTION having the same priority Non-firm Transmission Service.

3.2.3. If there are insufficient INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that can be curtailed to allow for INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service to begin, the RELIABILITY ~~COORDINATOR~~AUTHORITY will proceed to TLR Level 5a. (**See Section 6, "TLR Level 5a**," and **Appendix 9C1B"Interchange Transaction Curtailments During TLR Levels 3a and 5a,"** for Reallocation of Interchange Transactions using Firm Point-to-Point Transmission Service)

3.2.4. Reloading of curtailed INTERCHANGE TRANSACTIONS will precede starting of new or increased INTERCHANGE TRANSACTIONS.

3.2.4.1. Interchange Transactions whose tags were submitted to the Tag Authority prior to the TLR Level 2 or Level 3a being called, but were subsequently held from starting, are considered to have been curtailed and thus would be reloaded the same time as the curtailed INTERCHANGE TRANSACTIONS.

3.2.5. Transmission capability available for reloading or starting will be filled by eligible TRANSACTIONS on a pro-rata basis.

3.2.6. Transactions whose tags meet the Approved-tag Submission Deadline for Reallocation (see **Appendix 9C1B, "Interchange Transaction Reallocation During TLR Level 3a and 5a," Section B**) will be considered for reallocation for the upcoming hour. Tags submitted after this deadline will be considered for reallocation the following hour.

4. TLR Level 3b – Curtail INTERCHANGE TRANSACTIONS using Non-Firm Transmission Service Arrangements to mitigate a~~n~~ ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ Violation

4.1. Circumstances for entering this level:

- One or more transmission facilities are operating above their ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~, or
- Such operation is imminent and it is expected that facilities will exceed their security limit unless corrective action is taken, or
- One or more Transmission Facilities *will* exceed their ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT OR INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ 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.

4.2. Holding new INTERCHANGE TRANSACTIONS. The RELIABILITY ~~COORDINATOR~~AUTHORITY shall hold all new INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are at or above the CURTAILMENT THRESHOLD during the period of the ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT OR INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ Violation. INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service will be allowed to start if they are submitted to the IDC within specific time limits as explained in **Appendix 9C1C, "Interchange Transaction Curtailments During TLR Level 3b."**

4.3. Curtailment procedures to mitigate an ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or **INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~.** The RELIABILITY ~~COORDINATOR~~AUTHORITY shall curtail INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are at or above the CURTAILMENT THRESHOLD as specified in **Section C. "Interchange Transaction Curtailment Order."**

5. TLR Level 4 – Reconfigure Transmission

5.1. Circumstances for entering this level:

- One or more Transmission Facilities are above their ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~, or
- Such operation is imminent and it is expected that facilities will exceed their security limit unless corrective action is taken

5.2. Holding new INTERCHANGE TRANSACTIONS. The RELIABILITY ~~COORDINATOR~~AUTHORITY shall hold all new INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold during the period of the ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ Violation. INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service will be allowed to start if they are submitted to the IDC by 00:25 or the time at which the TLR Level 4 is called, whichever is later.

5.3. Reconfiguration procedures. Following the curtailment of all INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are at or above the CURTAILMENT THRESHOLD in Level 3b that impact the CONSTRAINED FACILITIES, if a~~n~~ ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ violation is imminent or occurring, the RELIABILITY ~~COORDINATOR~~AUTHORITS(IES) shall request that the affected TRANSMISSION ~~PROVIDERS~~ OPERATORS reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in **Section E., "Principles for Mitigating Constraints On and Off the Contract Path"**

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.**

6.1. Circumstances:

- The transmission system is secure
- One or more transmission facilities are at their ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~
- 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~~n~~ ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ Violation.
- No further transmission reconfiguration is possible or effective.

6.2. Reallocation procedures to allow new INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service to start. Reallocation of INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service is a three-step process as follows:

6.2.1. Step 1 – Identify available re-dispatch options. The RELIABILITY ~~COORDINATOR~~AUTHORITY shall assist the TRANSMISSION ~~PROVIDER~~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. If such re-dispatch options are deemed insufficient to mitigate loading on the CONSTRAINED FACILITIES, the RELIABILITY ~~COORDINATOR~~AUTHORITY shall proceed to implement these options while proceeding to Steps 2 and 3 below.

6.2.2. Step 2 – The RELIABILITY ~~COORDINATOR~~AUTHORITY shall calculate the percent of the overload on the CONSTRAINED FACILITY caused by both Firm Point-to-Point Transmission Service (at or above the CURTAILMENT THRESHOLD) and the TRANSMISSION PROVIDER'S Network Integration Transmission Service and Native Load, as required by the TRANSMISSION PROVIDER'S filed tariff. This is described in **Section F, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service."**

6.2.3. Step 3 – Curtail Interchange Transactions using Firm Transmission Service. The RELIABILITY ~~COORDINATOR~~AUTHORITY shall curtail or reallocate on a pro-rata basis (based on the MW level of the MW total to all such INTERCHANGE TRANSACTIONS), those INTERCHANGE TRANSACTIONS as calculated in **Section 7.2.2** over the CONSTRAINED FACILITIES. (See also **Appendix 9C1B, "Interchange Transaction Reallocation During TLR 3a and 5a.**" The RELIABILITY ~~COORDINATOR~~AUTHORITY 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. Available re-dispatch options will continue to be implemented.

7. TLR Level 5b – Curtail INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service to mitigate a~~n~~ ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ Violation.

7.1. Circumstances:

- One or more Transmission Facilities are operating above their ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~, or
- Such operation is imminent, or
- One or more Transmission Facilities *will* exceed their ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ 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.

7.2. Curtailment of INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service is a three-step process as follows:

7.2.1. Step 1 – Identify available re-dispatch options. The RELIABILITY ~~COORDINATOR~~AUTHORITY shall assist the TRANSMISSION ~~PROVIDER~~OPERATORS(S) in identifying those known re-dispatch options that are available to the Transmission Customer that will mitigate the loading on the CONSTRAINED FACILITIES. If such re-dispatch options are deemed insufficient to mitigate loading on the CONSTRAINED FACILITIES, the RELIABILITY ~~COORDINATOR~~AUTHORITY shall proceed to implement these options while proceeding to Steps 2 and 3 below.

7.2.2. Step 2 – The RELIABILITY ~~COORDINATOR~~AUTHORITY shall calculate the percent of the overload on the CONSTRAINED ~~FACILITY~~ FACILITY caused by both, Firm Point-to-Point Transmission Service (at or above the CURTAILMENT THRESHOLD) and the TRANSMISSION PROVIDER'S Network Integration Transmission Service and Native Load, as required by the TRANSMISSION PROVIDER'S filed tariff. This is described in **Section F, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service."**

7.2.3. Step 3 – Curtailment of Interchange Transactions using Firm Transmission Service. At this point, the RELIABILITY ~~COORDINATOR~~AUTHORITY shall begin the process of curtailing INTERCHANGE TRANSACTIONS as calculated in **Section 7.2.2** over the CONSTRAINED FACILITIES using Firm Point-to-Point Transmission Service until the ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM

OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMITOPERATING SECURITY LIMIT violation has been mitigated. The RELIABILITY COORDINATORAUTHORITY 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 PROVIDERS' tariff. Available re-dispatch options will continue to be implemented.

8. TLR Level 6 – Emergency Procedures

8.1. Circumstances:

- One or more Transmission Facilities are above their INTERCONNECTION RELIABILITY OPERATING LIMITSYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMITOPERATING SECURITY LIMIT.

- One or more Transmission Facilities *will* exceed their INTERCONNECTION RELIABILITY OPERATING LIMITSYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMITOPERATING SECURITY LIMIT upon the removal from service of a generating unit or another transmission facility.

8.2. Implementing emergency procedures. If the transmission loading condition is deemed critical to bulk system reliability by a RELIABILITY COORDINATORAUTHORITY deems that SOL or IROL violations are imminent, the RELIABILITY COORDINATORAUTHORITY has the authority toshall immediately direct the CONTROL AREASBALANCING AUTHORITIES and TRANSMISSION OPERATORS in his RELIABILITY AREA to re-dispatch 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 OPERATORSCONTROL AREAS shall comply with all requests from their RELIABILITY COORDINATORAUTHORITY.

This requirement already in revised Policy 9E, sections 1 and 2.

9. TLR Level 0 – TLR concluded

9.1. Interchange TRANSACTION restoration and notification procedures. The RELIABILITY COORDINATORAUTHORITY initiating the TLR Procedure shall notify all RELIABILITY COORDINATORS AUTHORITIES within the INTERCONNECTION via the RCIS RAIS when the INTERCONNECTION RELIABILITY OPERATING LIMITSYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMITOPERATING SECURITY LIMIT violations are mitigated and the system is in a "normal" state, allowing INTERCHANGE TRANSACTIONS to be reestablished at his discretion. Those with the highest transmission priorities shall be reestablished first if possible.

C. Interchange Transaction Curtailment Order

Curtailment of Interchange Transactions Using Non-firm Transmission Service

The RELIABILITY ~~COORDINATOR~~AUTHORITY will direct the curtailment of INTERCHANGE TRANSACTIONS using Non-firm TRANSMISSION SERVICE that are at or above the CURTAILMENT THRESHOLD for the following TLR Levels:

1. **TLR Level 3a**. Enable INTERCHANGE TRANSACTIONS using a higher Transmission reservation priority to be implemented, or

2. **TLR Level 3b**. Mitigate an ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ violation.

The INTERCHANGE TRANSACTION curtailment priority is determined by its TRANSMISSION SERVICE reservation over the constrained facility(ies) as shown in the box on the right.

The curtailment priority for INTERCHANGE TRANSACTIONS that do not have a Transmission Service reservation over the constrained facility(ies) is the lowest priority of the individual reserved transmission segments.

Transmission Service Priorities

Priority 0.	**Next-hour Market Service – NX***
Priority 1.	**Service over secondary receipt and delivery points – NS**
Priority 2.	**Hourly Service – NH**
Priority 3.	**Daily Service – ND**
Priority 4.	**Weekly Service – NW**
Priority 5.	**Monthly Service – NM**
Priority 6.	**Network Integration Transmission Service from sources not designated as network resources – NN**
Priority 7.	**Firm Point-to-Point Transmission Service – F and Network Integration Transmission Service from Designated Resources – FN**

Curtailment of Interchange Transactions Using Firm Transmission Service

The RELIABILITY ~~COORDINATOR~~AUTHORITY will direct the curtailment of INTERCHANGE TRANSACTIONS using Firm TRANSMISSION SERVICE that are at or above the CURTAILMENT THRESHOLD for the following TLR Levels:

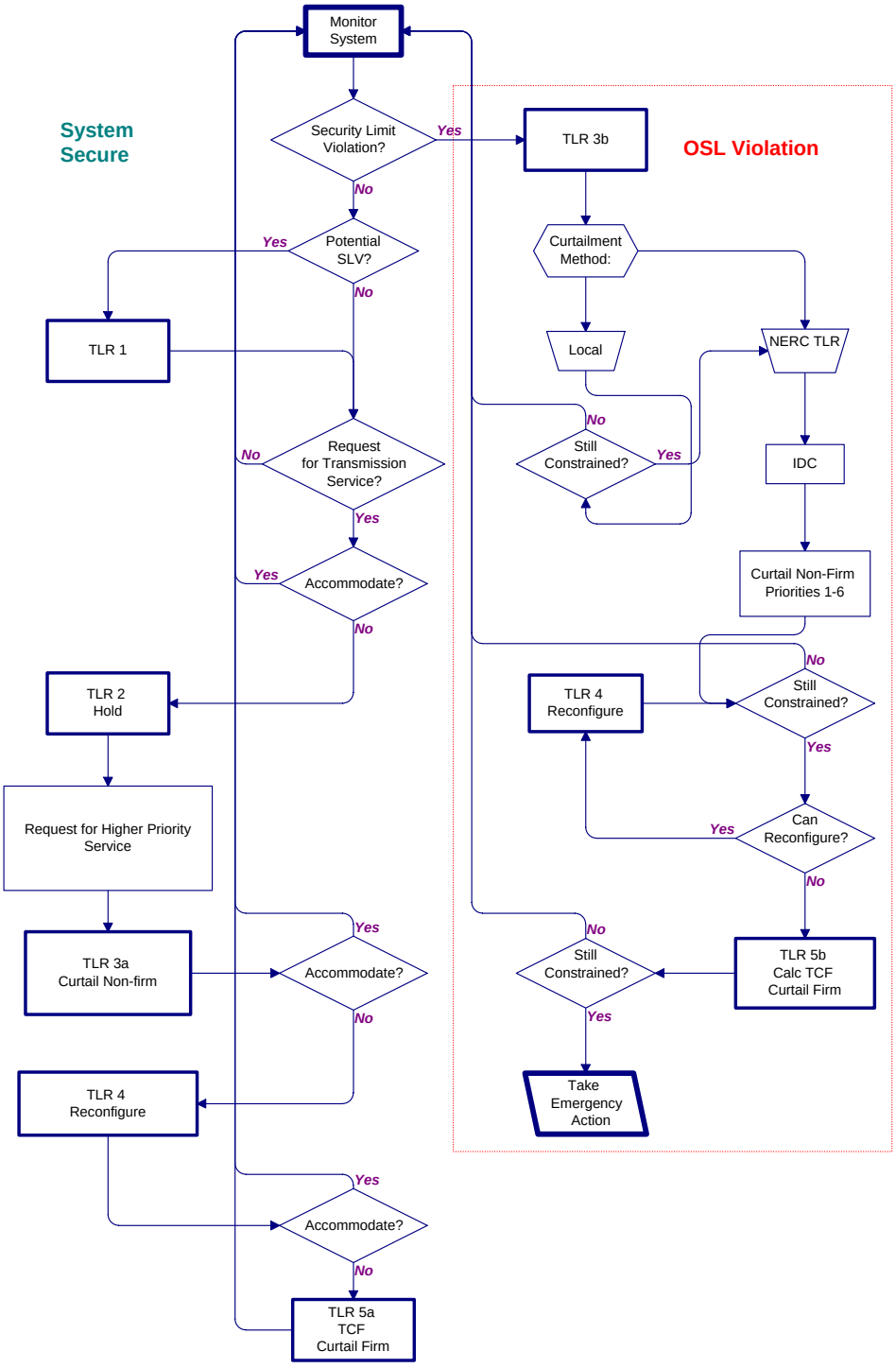
1. **TLR Level 5a**. Enable additional INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service to be implemented after all INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Service have been curtailed, or

2. **TLR Level 5b**. Mitigate a~~n~~ ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ 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.

D. Transaction Management and Curtailment Process

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

Business Practice
this also could be
training material.
between TLR 1 a
business practice
boxed to identify
process.



E. Principles for Mitigating Constraints On and Off the Contract Path

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 RELIABILITY ~~COORDINATORS~~ AUTHORITIES must agree on how the NERC Transmission Loading Relief Procedure will handle these INTERCHANGE TRANSACTIONS to, first, ensure the operational security of the INTERCONNECTION and, second, respect the obligations of the TRANSMISSION PROVIDERS' tariffs.

The curtailment priority of an INTERCHANGE TRANSACTION depends on whether the CONSTRAINED FACILITY is on or off the contract path, and, if on the contract path, the Transmission Service of the link with the CONSTRAINED FACILITY.

The RELIABILITY ~~COORDINATOR~~AUTHORITY must also consider 1) the tariff obligations of the Transmission Provider with the CONSTRAINED FACILITY, 2) the Transmission Customer's re-dispatch or other congestion management arrangements, and 3) arrangements among the TRANSMISSION PROVIDERS for handling certain CONSTRAINTS. Refer to examples beginning on page A9C1-2~~2~~2221~~1~~.

Principles for Constraints ON the Contract Path

Principle 1. If the transmission link with the CONSTRAINED FACILITY is Non-firm Point-to-Point Transmission Service, the entire INTERCHANGE TRANSACTION is considered non-firm, 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.

Discussion. The TRANSMISSION ~~PROVIDER~~ OPERATOR simply has to call its RELIABILITY ~~COORDINATOR~~AUTHORITY, 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 Principle #2 below.)

Principle 2. If the transmission link with the CONSTRAINED FACILITY is Firm Point-to-Point Transmission Service, the entire INTERCHANGE TRANSACTION is considered firm, even if other links in the contract path are non-firm.

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.

For Constraints OFF the Contract Path

Principle 3. If *any* of the transmission links on the contract path are Non-firm Point-to-Point Transmission Service, the INTERCHANGE TRANSACTION is considered non-firm by the system with the CONSTRAINED FACILITY that is not on the contract path, and takes on the *lowest* transmission service priority of all TRANSMISSION SERVICE links along the contract path.

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.

Principle 4. If *all* of the transmission links on the contract path with the CONSTRAINED FACILITY are Firm Point-to-Point Transmission Service, then the INTERCHANGE TRANSACTION is considered firm and will *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.

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~~AUTHORITY may attempt to arrange for TRANSMISSION ~~PROVIDERS~~ OPERATORS ~~or CONTROL AREAS~~BALANCING AUTHORITIES to reconfigure transmission or provide other congestion management options or BALANCING AUTHORITIES to redispatch, 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.

Examples

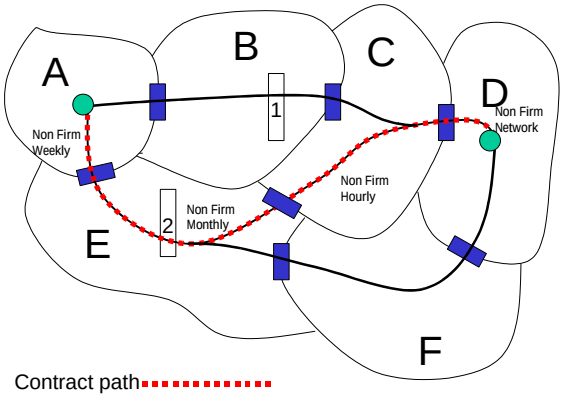
This section explains, by example, the obligations of the TRANSMISSION ~~PROVIDERS~~ ~~OPERATORS~~SERVICE PROVIDERS on and off the contract path when calling for Transmission Loading Relief. (References to Principles refer to **Section E, "Principles for Mitigating Constraints On and Off the Contract Path**," on the preceding pages.) When Reallocating or curtailing INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service under TLR Level 5a or 5b, the TRANSMISSION ~~PROVIDER~~ ~~OPERATOR~~SERVICE PROVIDERS may be obligated to perform comparable curtailments of its TRANSMISSION SERVICE to Network Integration and Native Load customers. See **Section F, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service**".

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

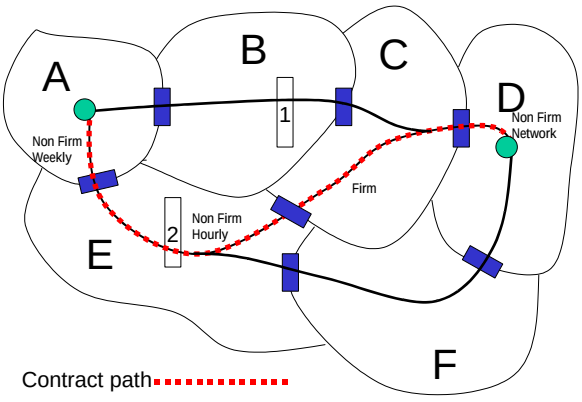
~~Examples may have to be altered to reflect Balancing Authorities and Transmission Operators/Providers.~~

Case 1: E is a non-firm Monthly path, C is non-firm Hourly; E has CONSTRAINT at #2.



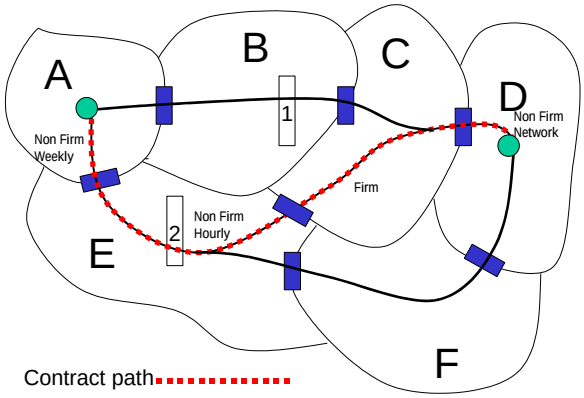
- E may call RELIABILITY ~~COORDINATOR~~AUTHORITY for TLR Procedure to relieve overload at CONSTRAINT #2.
- INTERCHANGE TRANSACTION A-D may be curtailed by TLR action **as though it was being served by Non-firm Monthly Point-to-Point Transmission Service**, even though it was using Non-firm Hourly Point-to-Point TRANSMISSION SERVICE from C. That is, it takes on the priority of the link with the CONSTRAINED FACILITY along the contract path. (Principle 1)

Case 2: E is a non-firm hourly path, C is firm; E has CONSTRAINT at #2.



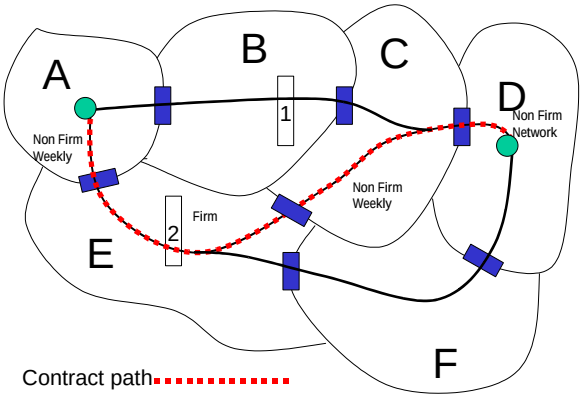
- Although C is providing Firm Service, the CONSTRAINT is not on C's system; therefore E is not obligated to treat the Interchange Transaction as though it was being served by Firm Point-to-Point Transmission Service.
- E may call RELIABILITY ~~COORDINATOR~~AUTHORITY for TLR Procedure to relieve overload 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 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. (Principle 1)

Case 3: E is a non-firm hourly path, C is firm, B has CONSTRAINT at #1.



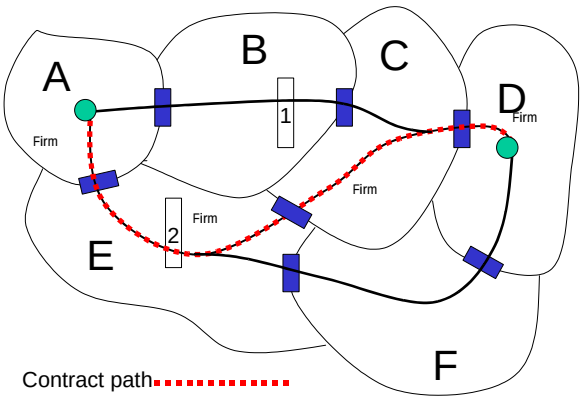
- B may call RELIABILITY ~~COORDINATOR~~AUTHORITY for TLR Procedure to relieve overload at CONSTRAINT #1.
- INTERCHANGE TRANSACTION A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Transmission Service, even if it was using firm Transmission Service elsewhere on the path. When the constraint is off the contract path, the Interchange Transaction takes on the lowest priority reserved on the contract path. (Principle 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~~AUTHORITY for TLR, which would curtail all INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point 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. (Principle 2)

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

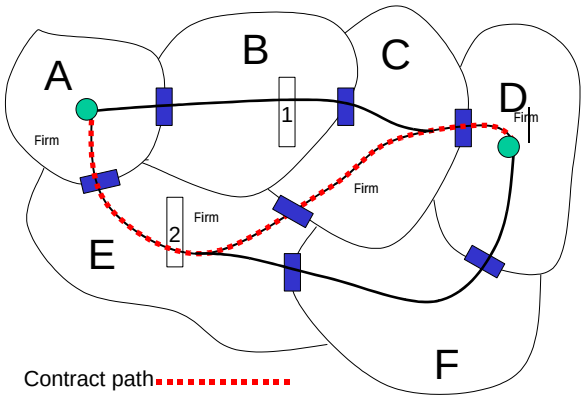


- INTERCHANGE TRANSACTION A – D is considered Firm priority for curtailment purposes.
- E may call RELIABILITY ~~COORDINATOR~~AUTHORITY for TLR, which would curtail all INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service first.
- E is obligated to curtail INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point 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. (Principle 2)
- A, C, D, may be requested by E to try to reconfigure transmission to mitigate CONSTRAINT #2 in E at E's expense. (Principle 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~~AUTHORITY for TLR Procedure for all *non-firm* INTERCHANGE TRANSACTIONS that contribute to the overload at CONSTRAINT #1.



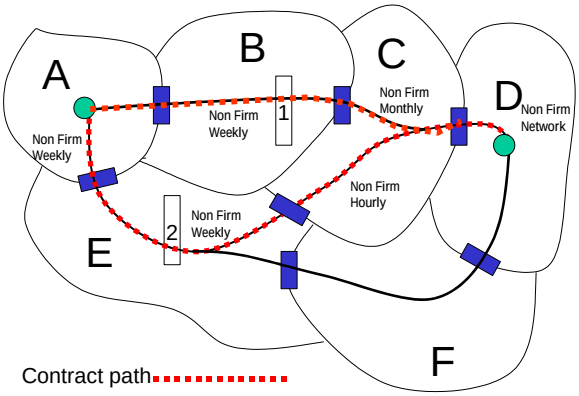
- Following the curtailment of all non-firm INTERCHANGE TRANSACTIONS, the RELIABILITY ~~COORDINATOR~~AUTHORITY (ies) will determine which ~~CONTROL AREA~~TRANSMISSION OPERATOR(S) will reconfigure their transmission, if possible, to mitigate constraint #1. (Principle 4)

- 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.) (Principle 4)

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. (Principle 1)

- 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).

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

[See also "Parallel Flow Calculation Procedure Reference Document"]

Introduction

The provision of Point-to-Point (PTP) transmission service, Network Integration (NI) transmission service and service to Native Load (NL) results in parallel flows on the transmission network of other TRANSMISSION ~~PROVIDERS~~OPERATORS. When a transmission facility becomes constrained, NERC Policy 9C, Appendix 9C1, calls for curtailment of INTERCHANGE TRANSACTIONS 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 Pro Forma tariffs filed with FERC by TRANSMISSION PROVIDERS, INTERCHANGE TRANSACTIONS using Non-firm PTP 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 PTP transmission service, NI transmission service and service to NL (TLR Level 5a and 5b). The NERC TLR Procedure requires that the curtailment of Firm PTP transmission service be accompanied by the comparable curtailment of NI transmission service and service to NL to the degree that these three transmission services contribute to the CONSTRAINT.

Basic Principles

A methodology, called the Per Generator Method Without Counter Flow, or simply the Per Generator Method, has been programmed into the INTERCHANGE DISTRIBUTION CALCULATOR (IDC) to calculate the portion of parallel flows on any CONSTRAINED FACILITY due to service to NL of each ~~CONTROL AREA~~BALANCING AUTHORITY (~~CA~~BA). The basic principles followed to assure comparable REALLOCATION or CURTAILMENT of firm transmission services are:

1. All firm transmission services (i.e. PTP, NI and service to NL) that contribute to the flow on any CONSTRAINED FACILITY by an amount greater than or equal to the CURTAILMENT THRESHOLD must be curtailed on a pro rata basis.
2. For Firm PTP transmission services, the TRANSFER DISTRIBUTION FACTORS (TDFs) must be greater than or equal to the CURTAILMENT THRESHOLD.
3. For NI transmission service and service to NL , the generator-to-load distribution factors (GLDFs) must be greater than or equal to the CURTAILMENT THRESHOLD. The GLDF on a specific CONSTRAINED FACILITY for a given generator within a ~~CONTROL AREA~~BALANCING AUTORITY is defined as the generator's contribution to the flow on that flowgate when supplying the load of that ~~CONTROL AREA~~BALANCING AUTHORITY.
4. The Per Generator Method assigns the amount of CONSTRAINED FACILITY relief that must be achieved by each ~~CONTROL AREA~~BALANCING AUTHORITY'S NI transmission service or service to NL. It does not specify how the reduction will be achieved.
5. The Per Generator Method places an obligation on all ~~CONTROL AREAS~~BALANCING AUTHORITIES in the Eastern INTERCONNECTION to achieve the amount of CONSTRAINED FACILITY relief assigned to them.

6. The implementation of the Per Generator Method must be based on transmission and generation information that is readily available.

Calculation Method

The calculation of the flow on a CONSTRAINED FACILITY due to NI transmission service or service to NL is based on the Generation Shift Factors (GSFs) of a ~~CONTROL AREA~~BALANCING AUTHORITY's assigned generation and the Load Shift Factors (LSFs) of its native load, relative to the system swing bus. The GSFs are calculated from a single bus location in the IDC model. The LSFs are defined as a general scaling of the native load within each ~~CONTROL AREA~~BALANCING AUTHORITY. The Generator to Load Distribution Factor (GLDF) is calculated as the GSF minus the LSF. The IDC reports all generators assigned to native load for which the GLDF is greater than or equal to the CURTAILMENT THRESHOLD.

The "**Parallel Flow Calculation Procedure Reference Document**" provides additional information about the criteria used to include generators in the IDC calculation process.

Example of Results of Calculation Method

An example of the output of the IDC calculation of curtailment of firm transmission service is provided below for the specific CONSTRAINED FACILITY identified in the Book of Flowgates as Flowgate 1368. In this example, a total Firm PTP contribution to the CONSTRAINED FACILITY, as calculated by the IDC, is assumed to be 21.8 MW.

The table below presents a summary of each ~~CONTROL AREA~~BALANCING AUTHORITY's responsibility to provide relief to the CONSTRAINED FACILITY due to its NI transmission service and service to NL contribution to the CONSTRAINED FACILITY. In this example, ~~CONTROL AREA~~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. See the "**Parallel Flow Calculation Procedure Reference Document**" for additional details regarding the information illustrated in the table (e. g. Scaled P Max and Flowgate NNL MW).

In summary, INTERCHANGE TRANSACTIONS would be curtailed by a total of 21.8 MW and NI transmission service and service to NL would be curtailed by a total of 178.2 MW by the five ~~CONTROL AREAS~~BALANCING AUTHORITIES identified in the table. These curtailments would provide a total of 200.0 MW of relief to the CONSTRAINED FACILITY.

					NNL Responsibility		*NNL Responsibility Acknowledgement*	
Sink RA	*Service Point*	*Scaled P Max*	*Flowgate NNL MW*	*Current NNL Relief*	*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**

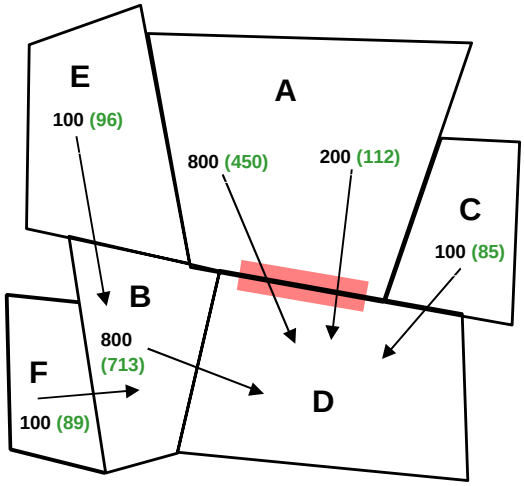
G. Transaction Curtailment Formula

Example

This example is based on the premise that a transaction should be curtailed in proportion to its 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 we need 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	Now we have to divide by the Distribution Factor to see how much the Transaction must be reduced to yield the 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								
	1	2	3	4	5	6	7	8	9
Transaction ID	Initial Transaction	Distribution Factor	(1)*(2) Impact On Interface	(2)/(2TOT) Impact weighting factor	(3)*(4) Weighted Max Interface Reduction	(5)*(Relief Requested) /(5 Tot) Interface Reduction	(6)/(2) Transaction Reduction	(1)-(7) New Transaction Amount	(8)*(2) Adjusted Impact On Interface
Example 1									
A-D(1)	800	0.6	480	0.34	164.57	209.73	349.54	450.46	270.27
A-D(2)	200	0.6	120	0.34	41.14	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.09	10.29	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.11	2.29	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.03	0.14	0.18	3.64	96.36	4.82
F-B	~~100~~	~~0.15~~	~~15~~	~~0.09~~	~~1.29~~	~~1.64~~	~~10.92~~	~~89.08~~	~~13.36~~
	2100	**1.75**	**760**		**219.71**	**280.00**	**553.45**	**1546.55**	**480.00**
Example 2									
A-D(1)	1000	0.6	600	0.52	313.04	262.16	436.93	563.07	337.84
B-D	800	0.15	120	0.13	15.65	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.17	3.48	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.04	0.22	0.18	3.64	96.36	4.82
F-B	~~100~~	~~0.15~~	~~15~~	~~0.13~~	~~1.96~~	~~1.64~~	~~10.92~~	~~89.08~~	~~13.36~~
	2100	**1.15**	**760**		**334.35**	**280.00**	**553.45**	**1546.55**	**480.00**
Example 3									
A-D(1A)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1B)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1C)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1D)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(2)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.04	5.07	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.06	1.13	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.01	0.07	0.18	3.64	96.36	4.82
F-B	~~100~~	~~0.15~~	~~15~~	~~0.04~~	~~0.63~~	~~1.64~~	~~10.92~~	~~89.08~~	~~13.36~~
	2100	**3.55**	**760**		**108.31**	**280.00**	**553.45**	**1546.55**	**480.00**



This report log is being automated and will be revised.

This is a business practice.

H. NERC Transmission Loading Relief Procedure Log

SAVE FILE DIRECTORY:

NERC TRANSMISSION LOADING RELIEF (TLR) PROCEDURE LOG

FILE SAVED AS: .XLS

INCIDENT :	DATE:	IMPACTED SECURITY COORDINATOR :	ID NO:

INITIAL CONDITIONS

Limiting Flowgate (LIMIT)	Rating	Contingent Flowgate (CONT.)	ODF

TLR Levels

0: TLR Incident Canceled
1. Notify Security Coordinators of potential problems.
2: Halt additional transactions that contribute to the overload
3a and 3b: Curtail transactions using Non-firm Transmission Service
4. Reconfigure to continue firm transactions if needed.
5a and 5b: Curtail Transactions using Firm Transmission Service.
6: Implement emergency procedures.

Priorities

NX	Next Hour Market Service
NS	Service over secondary receipt and delivery points
NH	Hourly Service
ND	Daily Service
NW	Weekly Service
NM	Monthly Service
NN	Non-firm imports for native load and network customers from non-designated network resources
F	Firm Service

TLR ACTIONS

LEVEL	TIME	Priority	TLR 3,5 No. TX Curtail	TLR 3,5 MW Curtail	MW Flow			COMMENTS ABOUT ACTIONS
					Limiting Element		Cont. Elem't	
					Present	Post Cont.	Present	

Appendix 9C1B – Interchange Transaction Reallocation During TLR Levels 3a and 5a

Version 1a

This Appendix contains only business practices.

Appendix Subsections

Introduction

This Appendix provides the details for implementing TLR Levels 3a and 5a, both of which provide a means for reallocation of Transmission Service.

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. (See **Appendix 9C1, "TLR Procedure – Eastern Interconnection," Section B.3, "TLR Level 3a.")** When a NERC TLR Level 3a is in effect, RELIABILITY ~~COORDINATORS~~ AUTHORITIES shall reallocate INTERCHANGE TRANSACTIONS according to the TRANSACTIONS' transmission service priorities. Reallocation also includes the orderly reloading of TRANSACTIONS by priority when conditions permit curtailed TRANSACTIONS to be reinstated.

TLR Level 5a accomplishes Reallocation by curtailing INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service on a pro-rata basis to allow new INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service to begin, also on a pro-rata basis. (See **Appendix 9C1, "TLR Procedure – Easton Interconnection," Section B.6, "TLR Level 5a.")**

A. Basic Principles

The basic principles for TRANSACTION REALLOCATION are built upon the premises of FERC Order 888, NERC Operating Policies and current business practices. Specifically, the key principles are:

1. Transaction REALLOCATION will normally only involve curtailments of INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service (TLR 3a). However, REALLOCATION may be used during TLR 5a to allow the implementation of additional INTERCHANGE TRANSACTIONS using Firm Transmission Service on a pro-rata basis.

2. Only those INTERCHANGE TRANSACTIONS at or above the CURTAILMENT THRESHOLD for which a TLR 2 or higher is called are affected by the Reallocation procedure.

The Curtailment Threshold is currently set at 5%.

3. INTERCHANGE TRANSACTIONS with higher transmission service priority will displace INTERCHANGE TRANSACTIONS using lower priority transmission service.

4. INTERCHANGE TRANSACTIONS using Non-firm Transmission Service will not be curtailed to allow the start or increase of another transaction having the same Non-Firm Transmission Service priority (marginal "bucket").

5. Reloading of curtailed INTERCHANGE TRANSACTIONS will precede starting of new or increased INTERCHANGE TRANSACTIONS.

6. INTERCHANGE TRANSACTIONS whose tags were submitted to the Tag Authority prior to the TLR 2 or 3a being called, but were subsequently held from starting because they failed to meet the Approved-Tag Submission Deadline for Reallocation (**see Section C, "Communications and Timing Requirements"**), would be considered to have been curtailed and thus would be eligible for reload at the same time as the curtailed INTERCHANGE TRANSACTION.

7. Eligible TRANSACTIONS will be reloaded or started on a pro-rata basis.

8. INTERCHANGE TRANSACTIONS whose tags meet the Approved-Tag Submission Deadline for Reallocation (**see Section C, "Communications and Timing Requirements"**) will be considered for reallocation for the upcoming hour. (However, INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service will be allowed to start as scheduled.) INTERCHANGE TRANSACTIONS whose tags are submitted to the Interchange Distribution Calculator after the Approved-Tag Submission Deadline for Reallocation will be considered for Reallocation the following hour. This applies to INTERCHANGE TRANSACTIONS using either Non-firm Point-to-Point Transmission Service and Firm Point-to-Point Transmission Service. If an INTERCHANGE TRANSACTION using Firm Interchange Transaction is submitted after the Approved-Tag Submission Deadline and after the TLR is declared, that Transaction will be held and then allowed to start in the upcoming hour.

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.

B. Communication and Timing requirements

When in a TLR 3a or 5a, the following timeline is required to support REALLOCATION. See Figures 2 and 3 for a depiction of the Reallocation Time Line.

Time Convention. In this document, the beginning of the current hour is 0000. The beginning of the next hour is 01:00 (see Figure 1 at right).

Approved-Tag Submission Deadline for Reallocation. Approved Tags for INTERCHANGE TRANSACTIONS at or above the CURTAILMENT THRESHOLD must be submitted to the Interchange Distribution Calculator by 00:25 to be considered for Reallocation at 01:00. (See Figure 1 at the right). (However, INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service will be allowed to start as scheduled.)

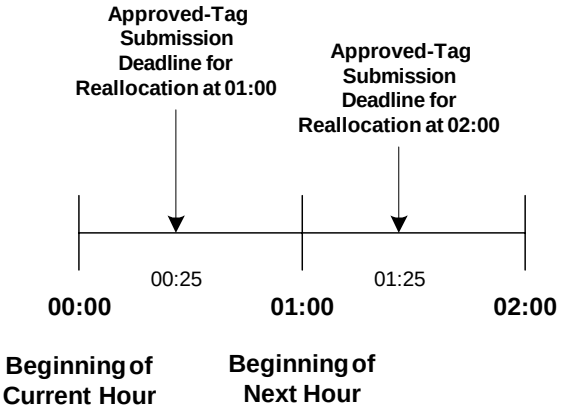


Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation

Tags submitted to the Interchange Distribution Calculator beyond these deadlines (for both Firm and Non-firm Point-to-Point Transmission Service) will not be allowed to start or increase at 01:00 but will be considered for REALLOCATION at 02:00. As soon as the TLR level is reduced to 1 or 0, the Approved-Tag Submission Deadline for Reallocation is no longer in effect.

Off-hour Transactions. Interchange Transactions with a Start Time other than *xx*:00 will 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.

Tag Evaluation Period. Tags will be evaluated by the appropriate ~~CONTROL AREAS~~BALANCING AUTH~~I~~ORITIES and TRANSMISSION PROVIDERS. The ~~CONTROL AREA~~BALANCING AUTHORITY and TRANSMISSION PROVIDER are expected to communicate approval or rejection (via the Tag Approval) by 00:25.

Collective Scheduling Assessment Period. The initiating RELIABILITY ~~COORDINATOR~~ AUTHORITY (the one who called and still has a TLR 3a or 5a in effect) shall at this time (00:25) run the IDC to obtain a three-part list of INTERCHANGE TRANSACTIONS including their transaction status:

1. INTERCHANGE TRANSACTIONS that may start, increase, or reload will have a status of PROCEED,

2. 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 will have a status of CURTAILED, and

3. INTERCHANGE TRANSACTIONS that are entered into the IDC after 00:25 will have a status of HOLD[1] and be considered for REALLOCATION at 02:00. Also, INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service submitted to the Tag Authority after TLR 2 or higher was declared ("post-tagged") but have not been allowed to start will retain the HOLD status until given

[1] The use of PROCEED, CURTAILED, and HOLD refer to an Interchange Transaction status in the IDC, not the E-tag status.

permission to PROCEED or E-Tag expires. (Note: TLR Level 2 does not hold INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service).

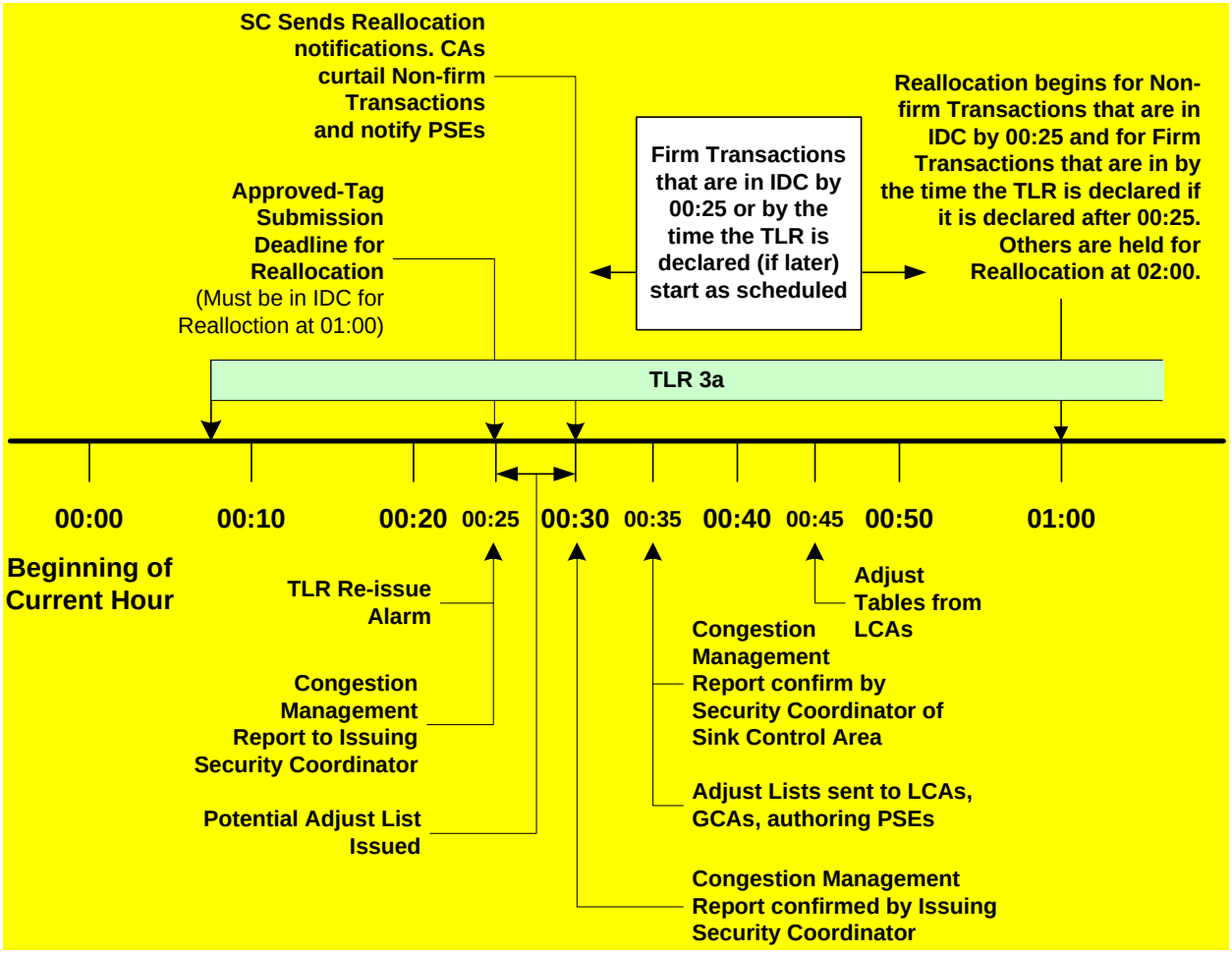


Figure 2 - Reallocation timing for TLR 3a called at 00:08.

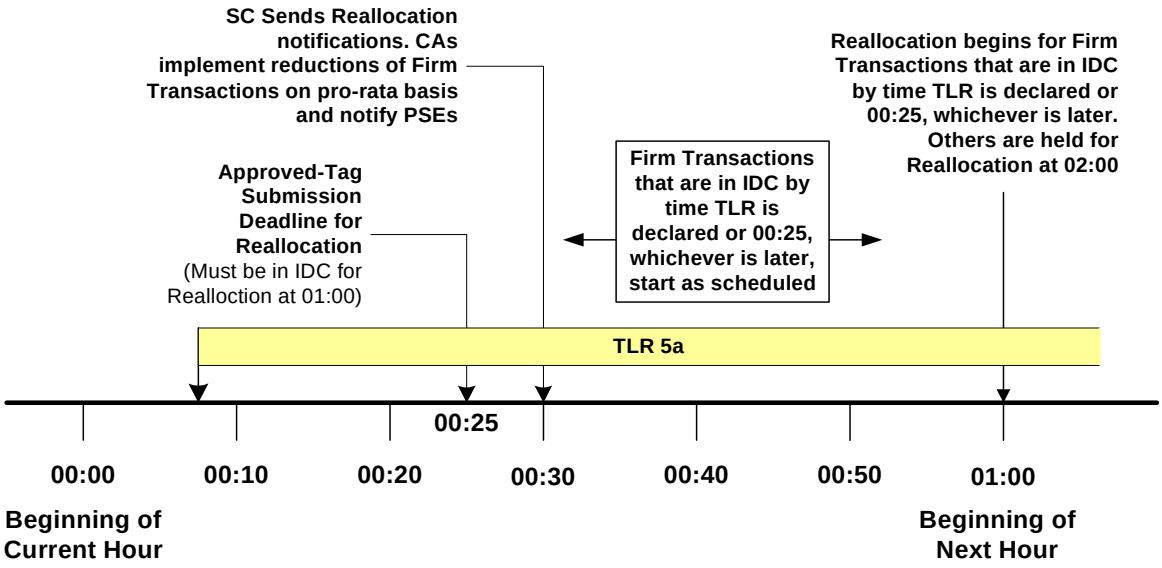


Figure 3 - Reallocation timing for TLR 5a called at 00:08.

The initiating RELIABILITY ~~COORDINATOR~~ RELAIBILITY shall communicate the list to the appropriate sink RELIABILITY ~~COORDINATORS~~ AUTHORITIES via the IDC, who shall in turn communicate the list to the SINK ~~CONTROL AREA~~BALANCING AUTHORITIES at 00:30 for appropriate actions to implement INTERCHANGE TRANSACTIONS (CURTAIL, PROCEED or HOLD). The IDC will prompt the initiating RELIABILITY ~~COORDINATOR~~ AUTHORITY to input the necessary information (i.e., maximum flowgate loading and curtailment requirement) into the IDC by 00:25.

Subsequent required reports before 01:00 will allow the RELIABILITY ~~COORDINATORS~~ AUTHORITIES 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 will not be permitted to start or increase the next hour.**

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.

In running the IDC, the RELIABILITY ~~COORDINATOR~~ AUTHORITY will have an option to specify the maximum loading of the CONSTRAINED FACILITY by all INTERCHANGE TRANSACTIONS using Point-to-Point Transmission Service. This allows the RELIABILITY ~~COORDINATOR~~ AUTHORITY to take into consideration ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMITS or INTERCONNECTION RELIABILITY OPERATING LIMITS~~OPERATING SECURITY LIMITS~~ and changes in TRANSACTIONS using other than point-to-point service taken under the OATT. 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 ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT ~~OPERATING SECURITY LIMIT~~ violation and hence triggering the declaration of a TLR 3b or 5b.

Notification of INTERCHANGE TRANSACTION status will go from the IDC to the RELIABILITY ~~COORDINATORS~~ AUTHORITIES via an IDC Report. Information will be communicated from the RELIABILITY ~~COORDINATORS~~ AUTHORITIES to the ~~CONTROL AREA~~BALANCING AUTHORITIES and

TRANSMISSION ~~PROVIDERS~~ OPERATORS by present methods. **Coordination of INTERCHANGE TRANSACTION changes including new INTERCHANGE TRANSACTIONS will be implemented according to existing practices depicted in Policy 3.**

Additional reporting and communications details on information posted from the IDC to the NERC TLR site are contained in Attachment A.

Customer Preferences on Timing to Call TLR 3a or 5a. A RELIABILITY ~~COORDINATOR~~ AUTHORITY will call a TLR 2 or 3a whenever he deems necessary to indicate that a transmission facility is approaching its ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~. 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. RELIABILITY ~~COORDINATORS~~ AUTHORITIES should 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 TRANSACTIONS. Nevertheless, recognizing the Approved-Tag Submission Deadline for Reallocation for REALLOCATION, from a Transmission Customer perspective, it is preferable that the RELIABILITY ~~COORDINATOR~~AUTHORITY call TLR 3a within a certain time period to allow for tag preparation and submission.

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 Interchange Distribution Calculator by the Approved-Tag Submission Deadline for reallocation at 02:00 (see Figure 4 at right). However, the preferred time period to declare a TLR 3a or 5a would be 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~~AUTHORITY would need to reissue the TLR 3a at 01:00.)

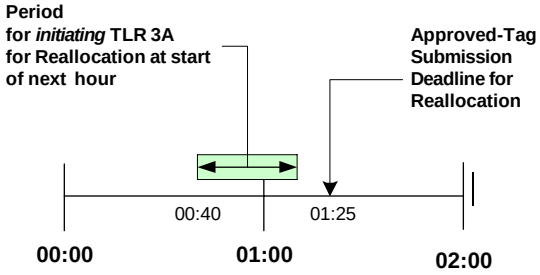


Figure 4 - "Ideal" time for issuing TLR 3a for Reallocation at 02:00.

It must be emphasized that the preferred time period is not a requirement, and should not in any way impede a RELIABILITY ~~COORDINATOR~~AUTHORITY's ability to declare a TLR 3a, 3b, 4, 5a, or 5b whenever the need arises.

C. How the IDC Handles Reallocation

The Interchange Distribution Calculator algorithms reflect the reallocation and reloading principles in this Appendix, 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.

A summary of IDC features that support the reallocation process is provided in Attachment A. Details on the interface and display features are provided in Attachment B.

Attachment A – Summary of IDC Features that Support Transaction Reloading/Reallocation

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

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 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.

Communications tools need to be developed to enable this posting.

IDC Logic, IDC Report, and Timing

1. The RELIABILITY ~~COORDINATOR~~AUTHORITY will run the IDC the Reloading/Reallocation report at approximately 00:26 The IDC will prompt the RELIABILITY ~~COORDINATOR~~AUTHORITY to enter a maximum loading value. The IDC will alarm if the RELIABILITY ~~COORDINATOR~~AUTHORITY doesn't enter this value and issue a report by 00:30 or change from TLR 3a Level. The Report will be distributed to ~~CONTROL AREAS~~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 Interchange Distribution Calculator 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 Interchange Distribution Calculator 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.

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 Policy and tariff rules.

1. **HOLD.** Permission has not been given for INTERCHANGE TRANSACTION to start or increase and 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. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.

2. **CURTAILED**. 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 ~~(OR SHOULD THIS BE THE IA?) CONTROL AREA~~ 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 ~~CONTROL AREA~~ will indicate through the E-Tag adjustment table to IDC if INTERCHANGE TRANSACTION will reload, start, or increase next-hour per PSE's energy schedule as appropriate.

Reallocation/Reloading Priorities

1. INTERCHANGE TRANSACTION candidates are ranked for loading and curtailment by priority as per Appendix 9C1, Section E, "Principles for Mitigating Constraints On and Off the Contract Path"]. 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 Interchange Distribution Calculator 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 Statuses.

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 Interchange Distribution Calculator 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 Interchange Distribution Calculator by the time the TLR is declared.

Total Flow Value on a Constrained Facility for Next Hour

1. The RELIABILITY ~~COORDINATOR~~AUTHORITY will calculate the change in net flow on a CONSTRAINED FACILITY due to Reallocation for the next hour based on:

   - Present CONSTRAINED FACILITY loading, present level of INTERCHANGE TRANSACTIONS, and BALANCING AUTHORITIES ~~CONTROL AREA~~ NNL responsibility[2] (TLR Level 5a) impacting the CONSTRAINED FACILITY,

   - ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMITS or INTERCONNECTION RELIABILITY OPERATING LIMITS ~~OPERATING SECURITY LIMITS~~, known interchange impacts and ~~CONTROL AREA~~BALANCING AUTHORITY NNL responsibility (TLR Level 5a) on the CONSTRAINED FACILITY the next hour, and

   - INTERCHANGE TRANSACTIONS scheduled to begin the next hour.

2. The RELIABILITY ~~COORDINATOR~~AUTHORITY 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~~AUTHORITY is allowed to call for TLR 3a or 5a when approaching a~~n~~ ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT ~~OPERATING SECURITY LIMIT~~ 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~~AUTHORITY must allow INTERCHANGE TRANSACTIONS to be reloaded as soon as possible. Reloading must be in an orderly fashion to prevent a~~n~~ ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT ~~OPERATING SECURITY LIMIT~~ violation from (re)occurring and requiring holding or curtailments in the restricted direction.

[2] Flows due to service to Network Customers and Native Load. See **"Parallel Flow Calculation Procedure Reference Document."**

Attachment B – Timing Requirements

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 TRANSACTIONS that start next hour.

2. In order to allow a RELIABILITY ~~COORDINATOR~~AUTHORITY 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~~AUTHORITY 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~~AUTHORITY only for previewing purposes, and can not be distributed to the other RELIABILITY ~~COORDINATORS~~ AUTHORITIES or the market. Instead, the issuing RELIABILITY ~~COORDINATOR~~AUTHORITY 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.

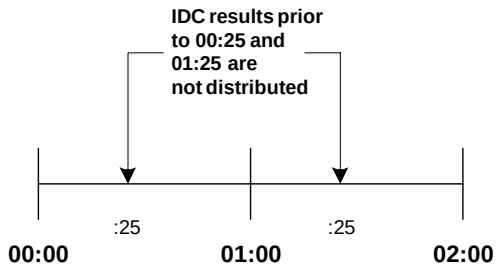


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

3. A TLR Level 3a or 5a Reallocation/Reloading report must be confirmed by he issuing RELIABILITY ~~COORDINATOR~~AUTHORITY prior to 00:30 in order to provide a minimum of 30 minutes for the RELIABILITY ~~COORDINATORS~~ AUTHORITIES with tags sinking in his RELIABILITY AREA to coordinate the Reallocation and Reloading with the SINK ~~CONTROL AREA~~BALANCING AUTHORITIES. This provides only 5 minutes (from 00:25 to 00:30) for the issuing RELIABILITY ~~COORDINATOR~~AUTHORITY 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 Subpriority Table, Page RAL-13).

Re-Issuing of a TLR Level 2 or Higher

Each hour, the IDC will automatically remind the issuing RELIABILITY ~~COORDINATOR~~AUTHORITY (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~~AUTHORITY 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~~AUTHORITY, and will take place at 00:25 so that, if the RELIABILITY ~~COORDINATOR~~AUTHORITY 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.

IDC Assistance with Next Hour PTP Transactions

In order to assist a RELIABILITY ~~COORDINATOR~~AUTHORITY 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 TRANSACTIONS for the next hour. In order to assist a RELIABILITY ~~COORDINATOR~~AUTHORITY 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 TRANSACTIONS for the next hour

as well as ~~Control Area~~BALANCING AUTHORITY with flows due to service to Network Customers and Native Load. The RELIABILITY ~~COORDINATOR~~AUTHORITY 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~~AUTHORITY 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 TRANSACTIONS to be reloaded, reallocated, or curtailed to make room for the 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 Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	850 MW – 800 MW = 50 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 50 MW = 900 MW

Example 2

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	1000 MW – 800 MW = 200 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 200 MW = 750 MW

Example 3

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of 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~~AUTHORITY to provide the MW requested relief amount on the CONSTRAINED FACILITY, and will not present the current and next hour MW impact of PTP transactions. The ~~SC~~RA-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 ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT ~~OPERATING SECURITY LIMIT~~ violation on the CONSTRAINED FACILITY by the requested amount.

IDC Calculations and Reporting Requirements

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 as follows:

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.

Priority	*Purpose*	*Explanation and Conditions*
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 sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

Examples of INTERCHANGE TRANSACTIONS using Non-firm Transmission Service sub-priority settings begin on page 16.

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 is at or above the CURTAILMENT THRESHOLD will have been curtailed and hence sub-prioritizing is not required.

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 transaction had never started and it was submitted to the Interchange Distribution Calculator 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 Transaction reallocation/reloading report by the issuing RELIABILITY ~~COORDINATOR~~AUTHORITY, 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.

Tag Reloading for TLR Levels 1 and 0

When a TLR Level 1 or 0 is issued, the CONSTRAINED FACILITY is no longer under ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ Violation and all INTERCHANGE TRANSACTIONS are allowed to flow. In order to provide the RELIABILITY ~~COORDINATORS~~ AUTHORITIES 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.

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 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~~ AUTHORITIES of those 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 TRANSACTIONS. In order not to overwhelm the RELIABILITY ~~COORDINATOR~~AUTHORITY with alarms, only those who issued the TLR and those whose 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 new TRANSACTIONS is required: TLR Level 2, 3a, 3b, 5a and 5b.

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 TRANSACTION is fully curtailed.

2. INTERCHANGE TRANSACTION 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 E-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.

Special Tag Status

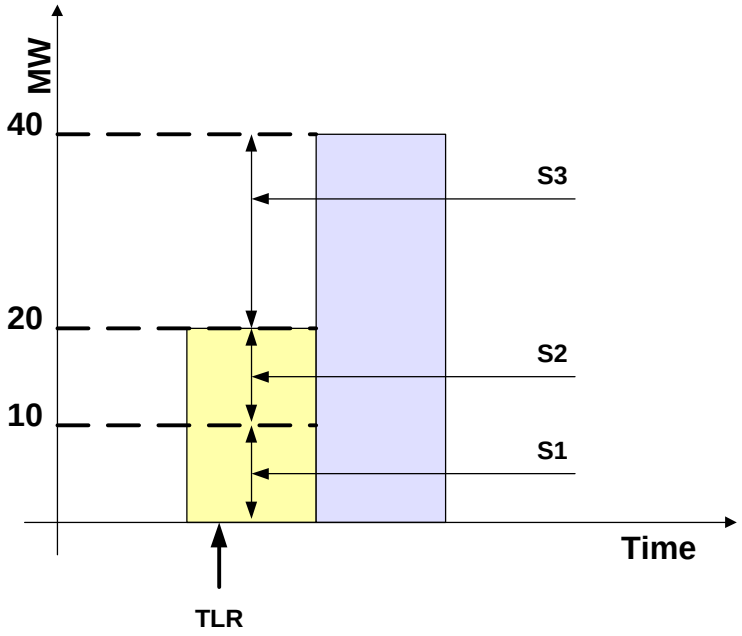
There are cases in which a tag may be marked with a composite state of ATTN_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to 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.

Transaction Sub-Priority Examples

The following describes examples of INTERCHANGE TRANSACTIONS using Non-firm Transmission Service sub-priority setting for a 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 – 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

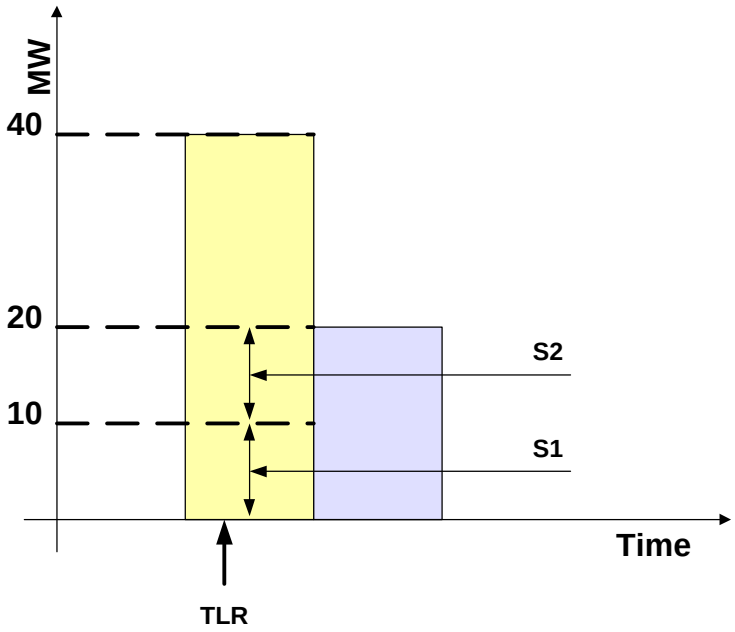


Sub-priorities for Transaction MW:

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

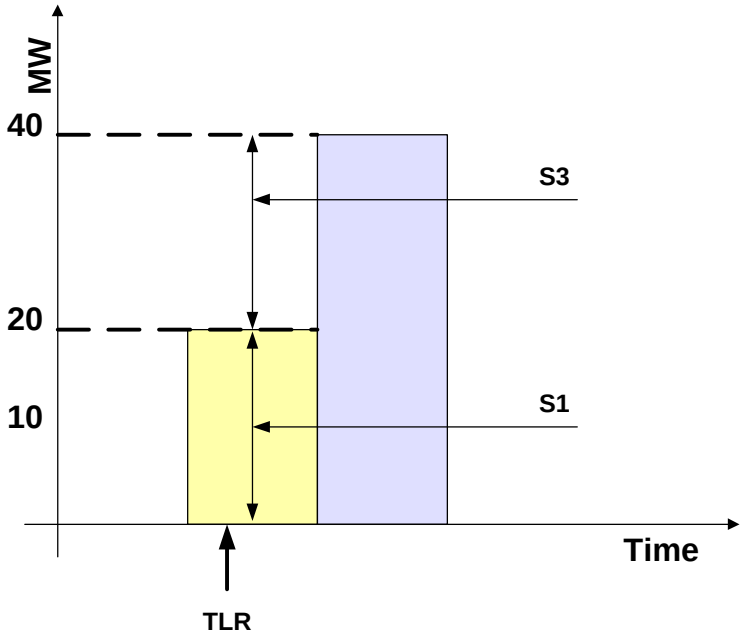


Sub-priorities for Transaction MW:

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

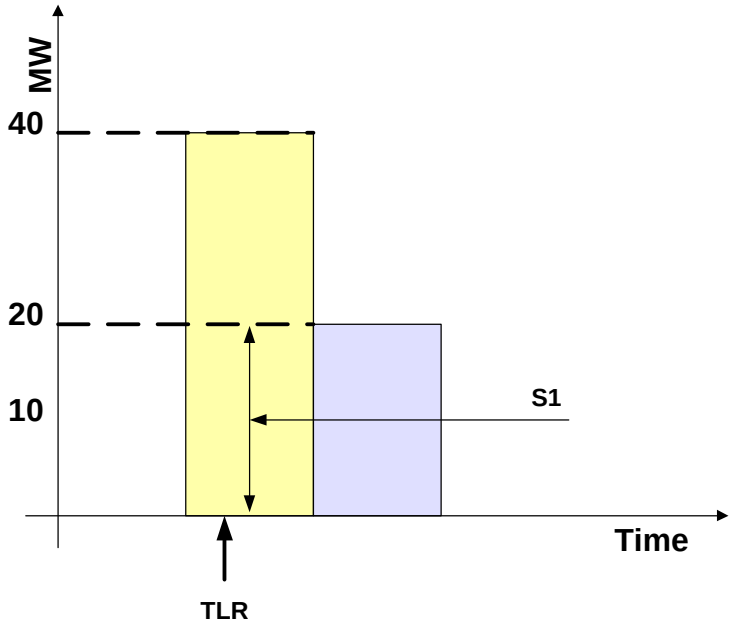
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



Sub-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

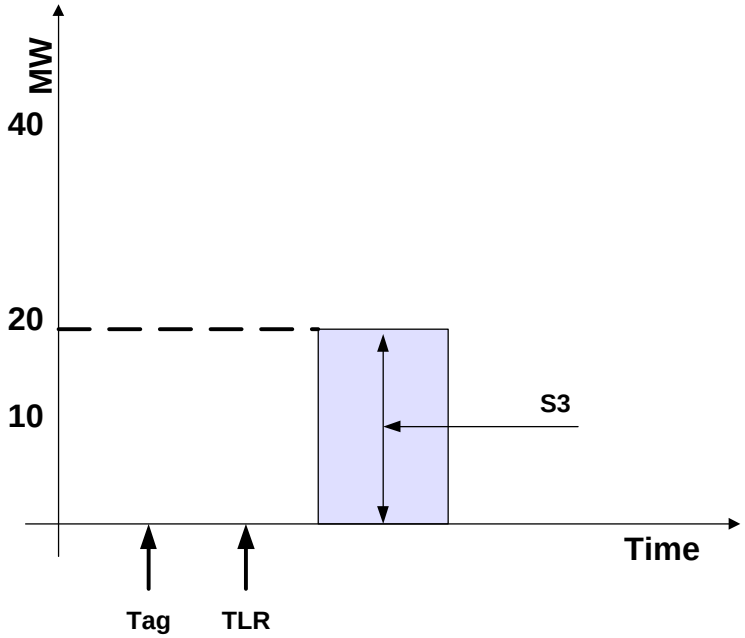


Sub-priorities for Transaction MW:

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 Transaction was scheduled to start

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start *after* TLR initiated)
Energy Profile: Next hour	20 MW



Sub-Priority	***MW Value***	***Explanation***
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

Appendix 9C1C – Interchange Transaction Curtailments During TLR Level 3b

Version 1

Appendix Subsections

A. Basic Principles
B. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service

This Appendix contains only business practices.

Introduction

This Appendix provides the details for implementing TLR Level 3b, which curtails INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service to assist the RELIABILITY ~~COORDINATOR~~ AUTHORITY to recover from ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ violations.

TLR Level 3b curtails INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are at or above the CURTAILMENT THRESHOLD. (See **Appendix 9C1, "TLR Procedure – Eastern Interconnection," Section B.4, "TLR Level 3b.")**. Furthermore, *all* new INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are at or above the CURTAILMENT THRESHOLD during the TLR 3b implementation period are halted or held. TRANSACTIONS using Firm Point-to-Point Transmission Service will be allowed to start if they are submitted to the IDC within specific time limits as explained in Section C, "Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service." Those Interchange Transactions using Firm Point-to-Point Transmission Service that are not submitted to the IDC within these time limits will be held.

A. Basic Principles

1. TLR 3b may be called at any time to help the RELIABILITY ~~COORDINATOR~~AUTHORITY mitigate a~~n~~ ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT~~OPERATING SECURITY LIMIT~~ violation.

2. Only those INTERCHANGE TRANSACTIONS at or above the CURTAILMENT THRESHOLD will be considered for curtailment, holding, or halting.

3. Existing INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service will be curtailed as necessary to provide the required relief on the CONSTRAINED FACILITY.

4. If INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service are scheduled to start during the current hour or the following hour, additional INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service will be curtailed to provide room for those INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service.

5. Existing INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are not curtailed will not be allowed to increase (they may flow at the same or reduced level).

6. There is no Reallocation of INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service during a TLR 3b.

7. INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service will be allowed to start as explained in Section C, "Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service."

8. If, after all Interchange Transactions using Non-firm Point-to-Point Transmission Service have been curtailed and there is insufficient room for Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled, the RELIABILITY ~~COORDINATOR~~AUTHORITY will progress to TLR Level 5b as necessary.

9. The IDC will issue ADJUST Lists to the Generation and Load Control Areas and the PURCHASING-SELLING ENTITY who submitted the tag. The ADJUST List will include:

    a. INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are to be curtailed, halted, or held during Current and Next hours.

    b. 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 C below.

10. The LOAD ~~CONTROL AREA~~BALANCING AUTHORITY must send the ADJUST Tables back to the IDC as soon as possible to ensure the most accurate calculations for actions subsequent to the TLR 3b being called.

11. The RELIABILITY ~~COORDINATOR~~AUTHORITY may call a TLR Level 3a as soon as the ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT ~~OPERATING SECURITY LIMIT~~ Violation has been mitigated.

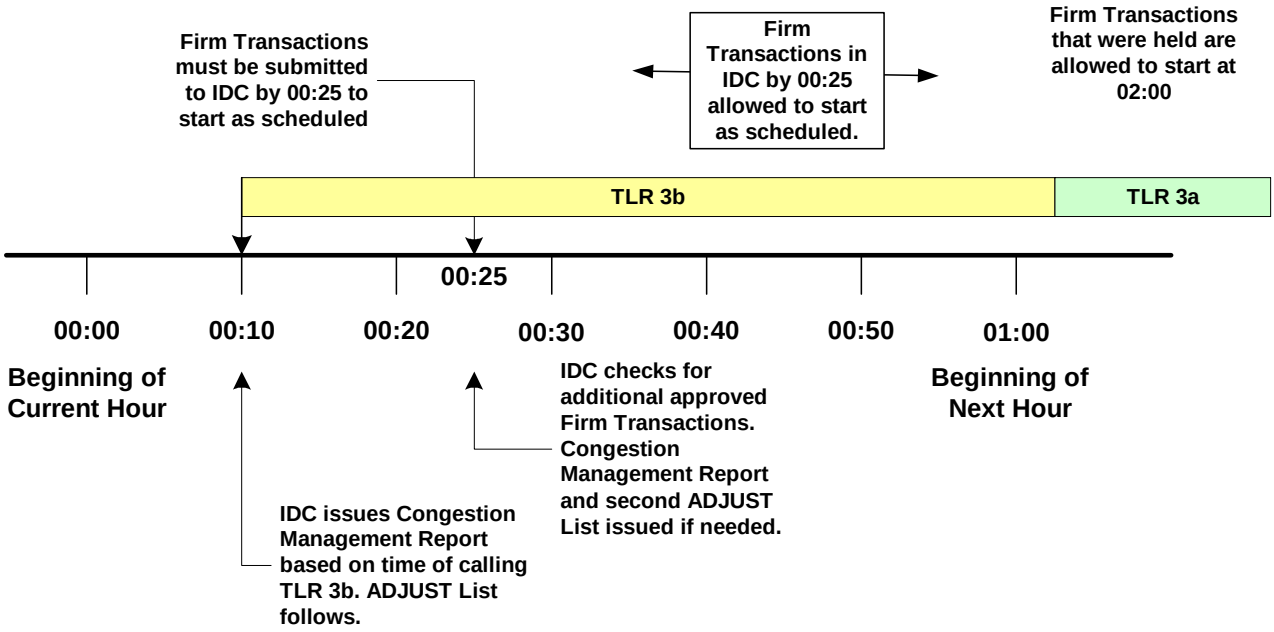
    a. If the TLR Level 3a is called before the hour 01, then a Reallocation will be computed for the start of that hour.

    b. Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation (see **Appendix 9C1B, "Interchange Transaction Reallocation During TLR Levels 3a and 5a," Section B**).

B. 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.



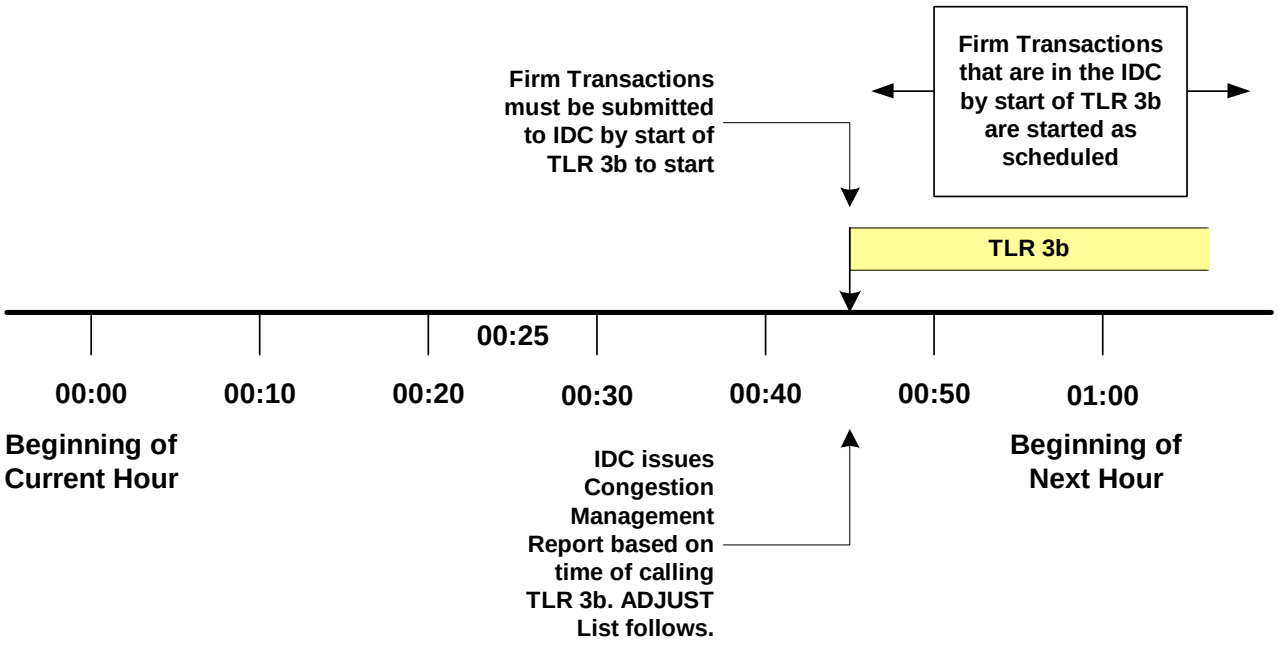
1. The IDC will examine the current hour (00) and next hour (01) for all INTERCHANGE TRANSACTIONS.
2. The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as 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.
4. All existing or new INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service.
5. 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.
6. INTERCHANGE TRANSACTIONS using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

7. Once the ~~INTERCONNECTION RELIABILITY OPERATING LIMIT~~SYSTEM OPERATING LIMIT or INTERCONNECTION RELIABILITY OPERATING LIMIT ~~OPERATING SECURITY LIMIT~~ Violation is mitigated, the RELIABILITY ~~COORDINATOR~~AUTHORITY 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.

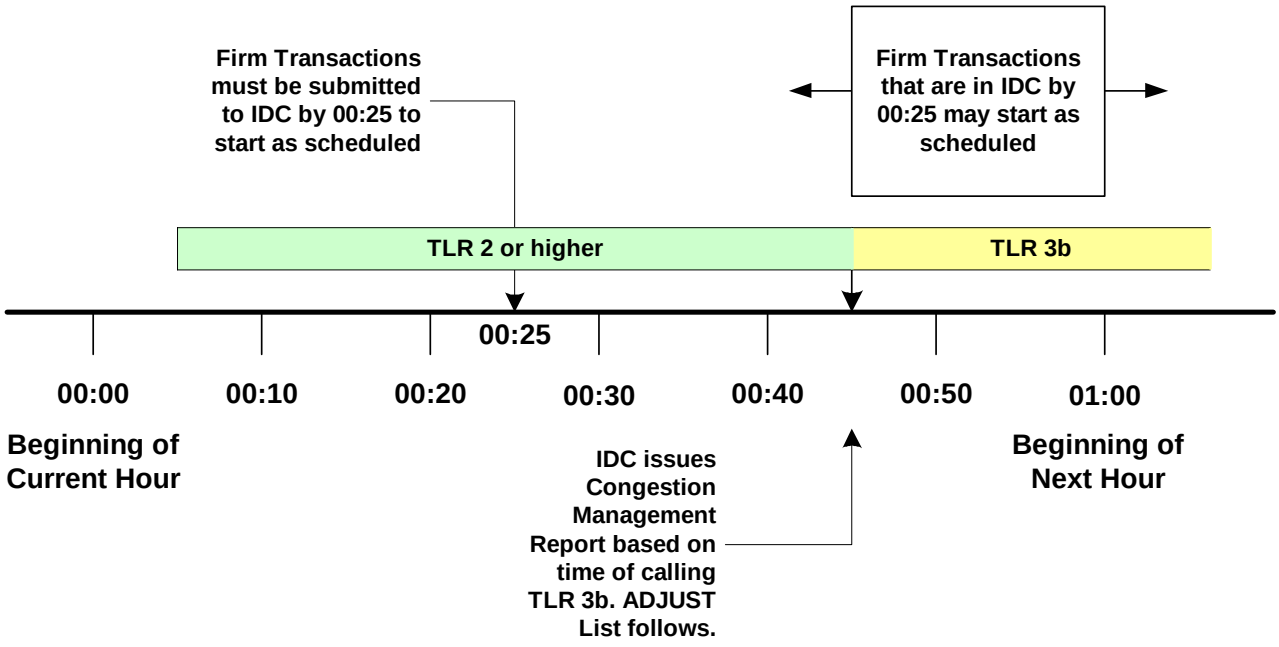
    b. INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

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.



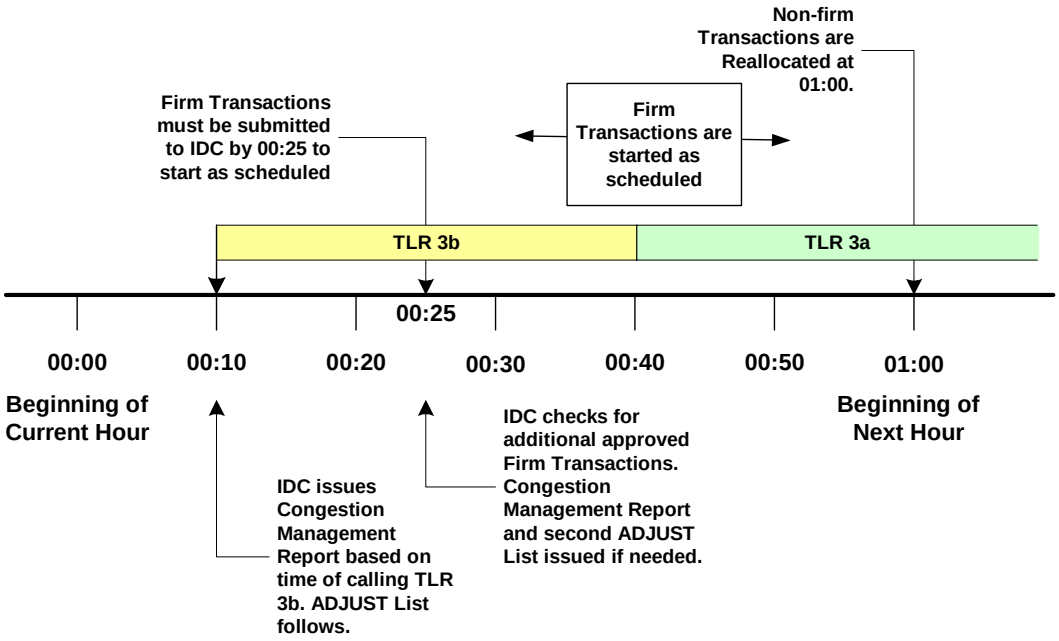
1. The IDC will examine the current hour (00) and next hour (01) for all INTERCHANGE TRANSACTIONS.
2. The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.
3. All existing or new INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority INTERCHANGE TRANSACTIONS using Non-firm Point-to-Point Transmission Service.
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 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.

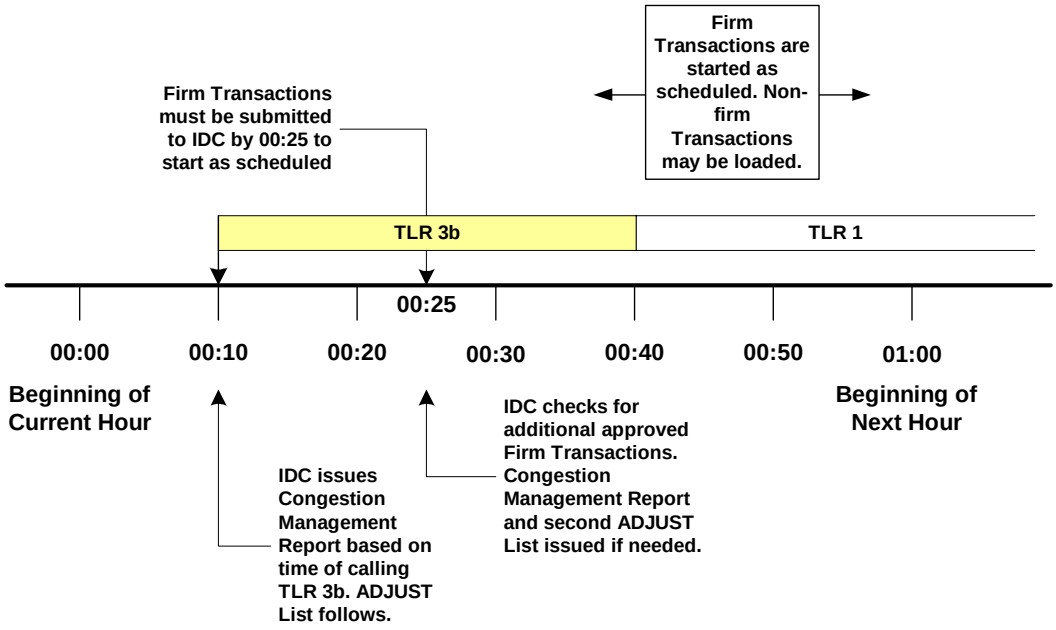


1. Same as Case 1, but TLR Level 3b ends at 00:40 and becomes TLR Level 3a.

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.

Parallel Flow Calculation Procedure Reference Document

Version 1, Draft 1

Approved by OC November 16, 2000.

[See also Appendix 9C1, "NERC TLR Procedure – Eastern Interconnection," Section F., "Transaction Contribution Factor"]

Subsections

A. Introduction

This Reference Document explains how to calculate the contribution of Network Integration Transmission Service and Native Load on a TRANSMISSION CONSTRAINT under TLR Level 5 (5a or 5b).

The provision of Point-to-Point (PTP) transmission service as well as Network Integration (NI) Transmission Service and service to Native Load (NL) results in parallel flows on the transmission network of other TRANSMISSION PROVIDERS. When a transmission facility becomes constrained, NERC Policy 9C, Appendix 9C1, calls for curtailment of INTERCHANGE TRANSACTIONS to allow INTERCHANGE TRANSACTIONS of higher priority to be scheduled (a process called "Reallocation") or to provide transmission loading relief. An INTERCHANGE TRANSACTION is considered for REALLOCATION or CURTAILMENT if its TRANSFER DISTRIBUTION FACTOR exceeds the TLR CURTAILMENT THRESHOLD, which is typically 5% for MONITORED TRANSMISSION FACILITIES. In compliance with the Pro Forma tariffs filed with FERC by TRANSMISSION PROVIDERS, 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 (TLR Level 5a and 5b). The NERC TLR Procedure requires that the curtailment of Firm Point-to-Point Transmission Service 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.

To ensure the comparable curtailment of these three transmission services as part of TLR Level 5a or 5b, the NERC Parallel Flow Task Force (PFTF) has developed a method that allocates appropriate relief amounts to all firm PTP and NI/NL services in a comparable manner. A methodology, called the Per Generator Method Without Counter Flow, or simply the Per Generator Method, has been devised by the PFTF to calculate the portion of parallel flows on any CONSTRAINED FACILITY due to NI/NL service of each CONTROL AREA (CA). The Per Generator Method has been presented to the Reliability Coordinator Working Group (RCWG) and the Market Committee (MC) and both committees have approved the methodology.

The Interchange Distribution Calculator Working Group (IDCWG) has determined that the IDC tool could not be upgraded by the summer 2000 to automatically calculate the parallel flow contributions from NI/NL service. The RCWG then directed the Distribution Factor Task Force (DFTF) to develop an interim procedure to implement the Per Generator Method as an integral part of TLR Level 5 for the summer of Year 2000. A description of this interim procedure is summarized in this reference manual.

B. Basic Principles

The basic principles for curtaining Interchange Transactions using Firm Point-to-Point TRANSMISSION SERVICE curtailment based on NERC Policy 9C, Appendix 9C1, are given below:

1. All firm transmission services, including PTP and NI/NL services, that contribute 5% (the CURTAILMENT THRESHOLD) or more to the flow on any CONSTRAINED FACILITY must be curtailed on a pro rata basis.

2. For Firm PTP transmission services, the 5% is based on TRANSFER DISTRIBUTION FACTORS (TDFs). For NI/NL transmission services, the 5% is based on generator-to-load distribution factors (GLDFs). The GLDF on a specific CONSTRAINED FACILITY for a given generator within a CONTROL AREA is defined as the generator's contribution to the flow on that flowgate when supplying the load of that CONTROL AREA.

3. The Per Generator Method assigns the amount of CONSTRAINED FACILITY relief that must be achieved by each CONTROL AREA NI/NL service. It does not specify how the reduction will be achieved.

4. The Per Generator Method places an obligation on all CONTROL AREAS in the Eastern Interconnection to achieve the amount of CONSTRAINED FACILITY relief assigned to them.

5. The implementation of the Per Generator Method must be based on transmission and generation information that is readily available.

C. Calculation Method

The calculation method is based on the Generation Shift Factors (GSFs) of an area's assigned generation and the Load Shift Factors (LSFs) of its native load, relative to the system swing bus. The GSFs are calculated from a single bus location in the base case. The LSFs are defined as a general scaling of the native load within each control area. The Generator to Load Distribution Factor (GLDF) is calculated as the GSF minus the LSF. Using the present NERC CURTAILMENT THRESHOLD of 5%, the reporting method looks for generation assigned to native load for which the Generation to Load Distribution Factor (GLDF) is greater than 5%. In cases where the Flowgate is considered limiting in the To → From direction, the sign of the GLDF is reversed.

Generators are included where the sum of the generator PMAXs for a bus is greater than 20 MW, including off-line units (e.g., three 9MW generators add up to greater than 20 MW on a bus). Smaller generators that do not meet this criterion are not included. In the calculation process, all tested generators are listed as in-service and their MVA base is set to the PMAX value. SDX information is then applied for generator outages and deratings as applicable. This process may adjust the output of generators that are not intended to participate for an area. In such cases, the generation MVA base value should be adjusted (Percent = 0%) so that those units do not participate. All participation adjustments should be justifiable upon inquiry.

The original MVA base from the seasonal IDC case is not used because it is zero for many non-participating generators, such as nuclear units. The unit output in the case (PGEN) is not used because it may be turned on to a default 1 MW in some instances. The PGEN is not considered a good indicator of the unit's capability. The unit maximum capability (PMAX) is considered a good indicator of the unit ability to contribute.

A set of generation ownership data matches the generators to their Native Load areas. By default, the generator ownership data lists each unit as being 100% contributing to the Native Load calculations of the

control area in which it is contained. There may be situations where the ownership would be less than 100%. Examples include: 1) a merchant generator who has tagged TRANSACTIONS; 2) a generator included multiple times for case modeling situations; or 3) a jointly owned unit. Jointly owned units may have multiple ownership listings to account for the multiple assigned areas. The joint ownership should be less than or equal to 100%.

Unit ownership can go beyond CONTROL AREA bus ownership. Units assigned to serve native load do not need to reside in the native load control area. However, units outside the native load control area should not be assigned when it is expected that those units will have tags associated with their transfers. Although the Native Load calculation has the ability to handle these ownership situations, the CONTROL AREAS and RELIABILITY COORDINATORS must supply the data or the default ownership will apply.

For each generator assigned to a CONTROL AREA'S Native Load, the amount of energy flowing on the CONSTRAINED FACILITY is calculated for the generator-to-Native Load transfer. The reporting is limited to those units that have a GLDF greater than or equal to 5%. The amount of transfer is based on the unit's maximum capability as listed in the base case (PMAX), and a comparison of Native Load level and the available generation assigned to the CONTROL AREA. The available assigned generation does not include small units that do not meet the 20 MW cut off. When the available generation exceeds the load level, it is assumed that not all the generation is participating, and therefore, the PMAX values are scaled down by the load to generation ratio. If available, excess generation that is sold is expected to be tagged. If available assigned generation is less than the native load level, it is assumed that the area may be importing, and therefore the affected units are not scaled (scaling=1.00). Imports are assumed to be tagged.

Summary

If Available Assigned Generation > Native Load, Then Scale Down Pmax

If Available Assigned Generation < Native Load, Then Do not Scale Down Pmax

The amount of Energy on the Flowgate (EOF) that the native load area is responsible for is given as:

$$EOF_{area} = \sum EOF_{gen\ assigned\ to\ area}$$

The Energy on the Flowgate (EOF) for a specific assigned generator with a GLDF > 5% is given as:

$$EOF_{assigned\ gen} = (GLDF)(PMAX_{adjusted\ for\ SDX})(Percent_{Assigned}/100)(Scaling_{Area})$$

D. Calculation Procedure

SDX data requirements

The factor calculation process uses available SDX data to update the current IDC seasonal case. Daily SDX data for transmission outages, generation outages and de-ratings, and daily load levels are applied to the calculation process. The SDX case updates are validated against tables to verify they match the seasonal case branch and generator lists. This is done to avoid process errors and to prevent the accidental insertion on new case data.

Transmission outages are applied by increasing the impedance to "9999" for out-of-service branches. The impedance adjustment is considered equivalent to the branch outage method, and it is preferred since it does not create islanding. Open transmission branches can also be placed back in-service based on SDX data.

Generator outages and de-ratings reported in SDX data are also applied to the case. The IDC seasonal case is initially adjusted such that the MVA base for all tested units is set to the PMAX value. By further adjusting the MVA base value, SDX generation data is then applied to the case to outage or de-rate units.

Daily SDX load levels are applied to the case. This information is used to update each control area's scaling factor. When daily load levels are not available through SDX, the seasonal value will be used as the default. The seasonal value is usually larger than the daily value.

The seasonal case is considered a solvable case. The applied daily SDX data makes the prepared daily case unsolvable. However, for factor calculation, a solved case is not required. Only a valid transmission topology is required.

Phase shifters are modeled as fixed angle. This is judged to be adequate for the present. However, in the relatively near future (when the MECS-IMO PARs are placed in service), ability to handle fixed MW operation will be needed.

Posting of Contribution Factors

The factors will be calculated by MAIN on a daily basis. The factors will be calculated some time after 1300 CST (or CDT) and will be posted before 1400 PM CST. This time was chosen because SDX data updates are required daily by 1300. The SDX data will be captured for those transmission and generation listings, which cross 1401 CST.

A morning calculation may be performed to show the preliminary daily results. This run may be performed about 0800 CST. Specific midday re-runs may be requested by contacting MAIN. A message will be sent to the NERC DFTF after any new report postings. All reports will have a time stamp indicating when they were created. The reports will be posted on the MAIN web site at http://www.maininc.org/firmcurt/index.htm. This site is password protected for transmission use only. RELIABILITY COORDINATORS are expected to be given access to the reports via the RCIS system. Contact MAIN staff if access to the reports is needed. Reports are listed for each reliability flowgate. There is also a summary for each CONTROL AREA. Depending upon browser settings, the page may need to be reloaded/refreshed to view updated reports.

E. Sample Calculation

An example of calculating firm transaction curtailments is provided in this section, assuming that the constrained flowgate is #3006 (Eau Claire-Arpin 345 kV circuit). The GLDFs for this flowgate are presented in Attachment 1. In this example, a total Firm PTP contribution of 708.85 MW is assumed to be given by the IDC.

From Attachment 1, the NI/NL contributions of all CONTROL AREAS that impact the CONSTRAINED FACILITY are listed below:

ALTE = 27.0 MW

ALTW = 41.1 MW

NSP = 33.1 MW

WPS = 26.2 MW

Total NL & NI contribution = 127.4 MW

Total Firm (PTP & 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 portion of total Firm contribution = 708.85/836.25 = 84.47%

Allocation of relief of the CONSTRAINED FACILITY to each CONTROL AREA with impactive 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 CONTROL AREAS that impact NI/NL contribution and Firm PTP service are responsible for the providing the following amounts of flowgate relief:

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

Relief provided by removing NL & NS contributions ALTE = 0.032 x 50 = 1.60 MW

Relief provided by removing NL & NS contributions ALTW = 0.049 x 50 = 2.45 MW

Relief provided by removing NL & NS contributions NSP = 0.039 x 50 = 1.95 MW

Relief provided by removing NL & NS contributions WPS = 0.031 x 50 = 1.55 MW

Attachment 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**
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**

Flowgate Administration Reference Document

Version 1

Reference Document Subsections

A. General

Purpose

The Flowgate Administration Reference Document explains how RELIABILITY COORDINATORS can add, modify, and remove flowgates from the Interchange Distribution Calculator (IDC). The procedures included in this document follow:

- Ensure that Reliability Authorities have the flowgate data that they need to manage system security.
- Ensure that market participants receive timely information about flowgate changes that they need to assess impacts on Interchange Transactions.
- Address administrative authorities, criteria, and processes for:
  - Adding and deleting "permanent" Reliability Flowgates
  - Modifying Reliability Flowgates in the Book of Flowgates
  - Defining "temporary" Reliability Flowgates
  - Expiring "temporary" Reliability Flowgates
  - Adding "temporary" Reliability Flowgates to the Book of Flowgates
  - Modifying Informational Flowgates
  - Modifying Market Redispatch Flowgates

Terms

Flowgate. A single or group of transmission elements intended to model MW flow impact relating to transmission limitations and transmission service usage. Within the IDC, Transfer Distribution Factors (see PTDFs and OTDFs as defined below) are calculated to approximate MW flow impact on the flowgate caused by point-to-point power transfers.

Flowgate Categories:

Temporary Flowgate. A flowgate created by a RELIABILITY COORDINATOR within the IDC to monitor or mitigate a Constraint for which a PERMANENT FLOWGATE has not been identified. TEMPORARY FLOWGATES expire when each new IDC base case is updated. IDC base cases are normally updated on a monthly basis.

Permanent Flowgate. A flowgate approved by Reliability Authority Working Group and listed in the Book of Flowgates. PERMANENT FLOWGATES remain in the IDC unless removed from the Book of Flowgates and deleted from the IDC.

Flowgate Types: A flowgate may be classified as one or more of the following types

Informational Flowgate Type: A flowgate that the RELIABILITY COORDINATOR can establish for monitoring purposes only. An INFORMATIONAL FLOWGATE does not qualify for Transmission Loading Relief (TLR) usage and should be reviewed periodically.

Reliability PTDF Flowgate Type: A RELIABILITY PTDF FLOWGATE is represented by the PTDF of its defined transmission element(s). The defined transmission element(s) can be the monitored element(s) or the contingent element(s). This type of flowgate qualifies for TLR usage under NERC Policy 9, "Reliability Coordinator Procedures."

Reliability OTDF Flowgate Type: A RELIABILITY OTDF FLOWGATE is another type of Reliability Flowgate. It is represented by the OTDF on the Monitored Element(s) with the simulated outage of the critical contingency. This type of flowgate also qualifies for TLR usage under NERC Policy 9.

Commercial Flowgate Type: COMMERCIAL FLOWGATES contain transmission elements on which transmission service has been or is expected to be sold. Some RELIABILITY COORDINATORS and Transmission Providers use COMMERCIAL FLOWGATES in ATC calculations. A COMMERCIAL FLOWGATE status alone does not qualify for TLR usage. RELIABILITY COORDINATORS and Distribution Factor Work Group are not responsible for approving, modeling, and maintaining COMMERCIAL FLOWGATES and therefore the administrative process described in this document does not apply to COMMERCIAL FLOWGATES.

MRD Flowgate Type: A flowgate for which the Market Redispatch (MRD) procedure may be used to provide the equivalent relief by a TLR to mitigate a constraint. MRD Flowgates are listed on the NERC web site along with their real-time flows. An MRD FLOWGATE is necessarily a Reliability Flowgate.

Responsibilities and Authorities

The **Operating Reliability Subcommittee (ORS)** is responsible for:

- Reviewing all changes to the Book of Flowgates at each of its regularly scheduled meetings.
- Resolving disputes resulting from the implementation of Section B, "Guidelines for Permanent Flowgates," or Section C, "Flowgate Administration," in this reference document.

The **Reliability Coordinator Working Group (RCWG)** is responsible for:

- Authorizing all changes to the Book of Flowgates on a monthly basis.
- Providing semi-annual reports on flowgate changes to the ORS.

Individual **RELIABILITY COORDINATORS** are responsible for:

- Authorizing the use of TEMPORARY FLOWGATES

- Modeling TEMPORARY FLOWGATES within IDC
- Recommending conversion of TEMPORARY FLOWGATES to PERMANENT FLOWGATES
- Reviewing and updating periodically its PERMANENT FLOWGATES
- Authorizing the removal of PERMANENT FLOWGATES

The **Distribution Factor Working Group (DFWG)** is responsible for:

- Performing the on-going function of administering the Book of Flowgates under the direction of RCWG. Administration includes but is not limited to the following:

    1. Tracking the relationship between TEMPORARY and PERMANENT FLOWGATES for historical purposes.

    2. Reviewing flowgate data including the transmission element, which define PERMANENT FLOWGATES.

    3. Reviewing flowgate data including transmission elements that define TEMPORARY FLOWGATES used for TLR greater than TLR Level 1.

- Authorizing Book of Flowgates changes that can be unanimously agreed upon. If DFWG cannot unanimously agree, or if they see reasons for RAWG discussions, DFWG will forward the flowgate review to RAWG with its recommendations.
- Provide quarterly update to the RAWG on the Book of Flowgates changes highlighting key changes in PERMANENT FLOWGATES.
- Modeling the basic set of permanent Book of Flowgates changes as approved by RAWG.
- Maintaining and being the “owner” of the Book of Flowgates.
- Developing a posted flowgate review process for evaluating flowgates.

The **NERC staff** is responsible for:

- Posting the basic set of flowgates on the NERC web site, and posting IDC messages regarding flowgate changes and TEMPORARY FLOWGATE additions. IDC message posting is expected to be an automated process.

B. Guidelines for Permanent Flowgates

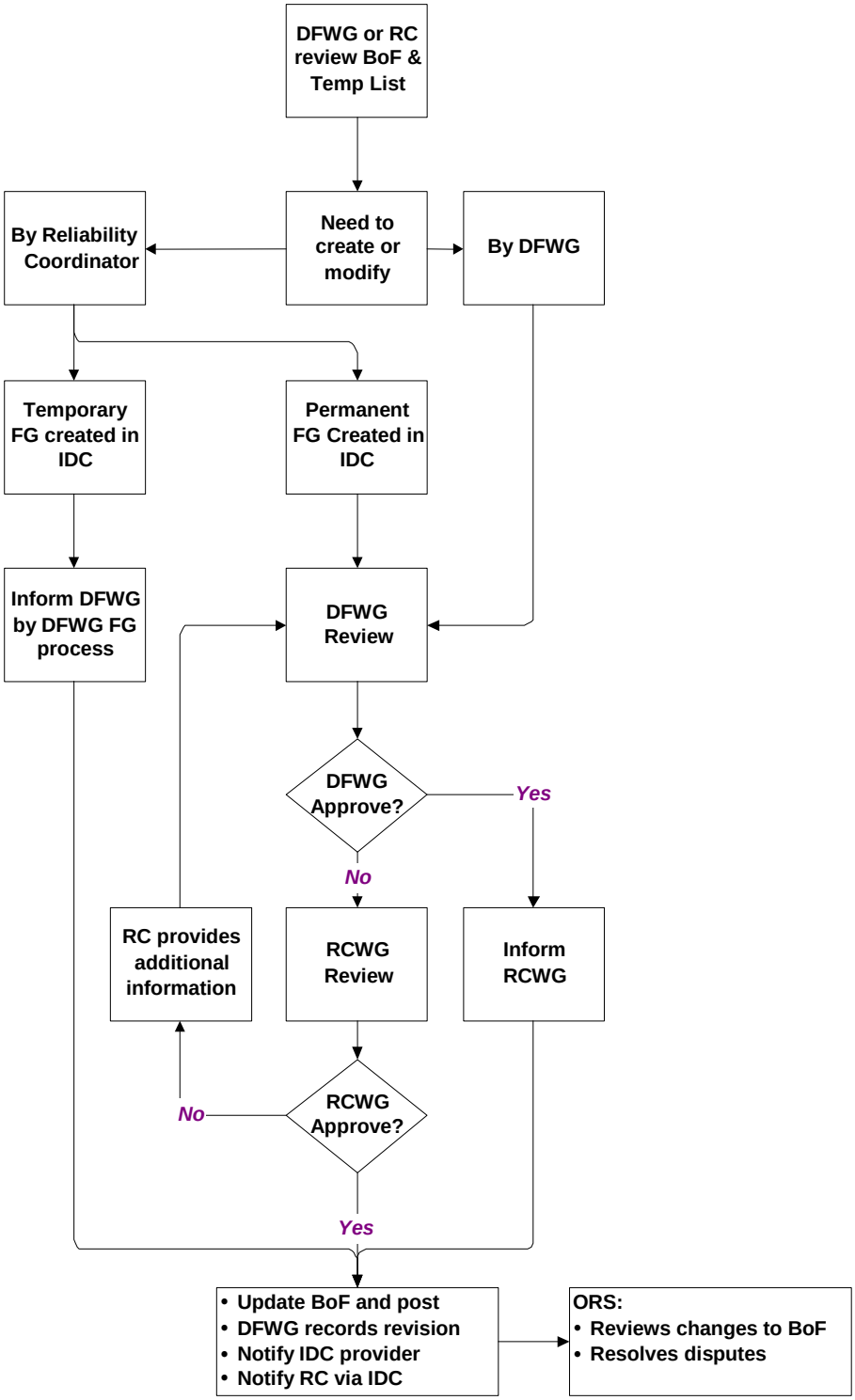
A PERMANENT FLOWGATE must meet at least on of the following requirements to be in the Book of Flowgates:

1. A TLR has been called for the flowgate at least once during the past two years, or
2. A TLR greater than TLR Level 1 has been called for on the TEMPORARY FLOWGATE at least once during the past two years and the TEMPORARY FLOWGATE was created multiple times during the past two years, or
3. The flow on the flowgate has exceeded a reasonably high percentage (i.e. 90%) of its applicable rating or Operating Security Limit (OSL) at least once during the past three years, or
4. The flow on the flowgate is expected to exceed a reasonably high percentage (i.e. 90%) of its applicable rating or the OSL in the coming year
5. DFWG or RCWG has determined that the flowgate should remain in the Book of Flowgates, or the RELIABILITY COORDINATOR recommends and presents the rationale to RCWG that a flowgate be included or retained in the Book of Flowgates.

PERMANENT FLOWGATES will not be removed from the Book of Flowgates or the IDC database unless requested by the responsible RELIABILITY COORDINATOR.

C. Flowgate Administration

The Flowgate Administration process is shown in the flowchart below.



Permanent Flowgates

1. ORS has final approval for the basic set of flowgates taking into account recommendations from RCWG and DFWG.

2. DFWG assists in preparing information for RCWG review and maintains records showing when flowgate decisions were made.

3. Responsible RELIABILITY COORDINATOR or its DFWG representative authorizes changes to the PERMANENT FLOWGATES through submittal to DFWG.

4. DFWG will either unanimously approve flowgates or forward flowgates to RAWG with recommendations.

5. After the flowgate approval, DFWG and IDC service provider will model the flowgate changes.

6. NERC staff will post the basic set of flowgates with a link provided via the NERC web site at crc.nerc.com.

Temporary Flowgates

1. RELIABILITY COORDINATORS along with the Transmission Providers they represent will determine the need for TEMPORARY FLOWGATES. TEMPORARY FLOWGATES can be created directly within IDC and may become available for potential TLR use within 20 minutes to one hour after they are entered into IDC. TEMPORARY FLOWGATES can be deleted at any time, and they automatically expire when each new IDC base case is updated.

2. Information regarding TEMPORARY FLOWGATE additions, modifications, or deletions is communicated to the RELIABILITY COORDINATORS via the IDC service provider. Whenever a flowgate is added, deleted, or changed, the IDC service provider will send a message to DFWG with a copy to a NERC listserver. NERC staff will publicly post the message on the NERC crc.nerc.com web page. Permanent Book of Flowgates changes will be posted separately.

3. TEMPORARY FLOWGATES will automatically expire when a new IDC base case is updated. IDC base cases are normally updated on a monthly basis. IDC model updating process schedule will be posted on the NERC web site, as it becomes known.

4. TEMPORARY FLOWGATES, which are used for TLR greater that Level 1, should go through a DFWG review. Individual RELIABILITY COORDINATORS may recommend converting a TEMPORARY FLOWGATE into a PERMANENT FLOWGATE by following Step 3 in the PERMANENT FLOWGATES section above.

Informational Flowgates

1. RELIABILITY COORDINATORS may establish an INFORMATIONAL FLOWGATE to help them monitor power flows over certain interfaces.

2. The RELIABILITY COORDINATOR establishing the INFORMATIONAL FLOWGATE will review the flowgate periodically, and remove the flowgate if no longer needed.

3. INFORMATIONAL FLOWGATES are included in the Book of Flowgates that is posted on the NERC web site.

4. INFORMATIONAL FLOWGATES may be converted to Reliability Flowgates by going through the formal recommendation process.

MRD Flowgates

1. The NERC Congestion Management Subcommittee (CMS) determines a list of MRD Flowgates to support the NERC MRD Procedure.

2. The DFWG or NERC staff, upon request by the CMS, notifies the IDC service provider to model changes to the MRD Flowgates for Generation Shift Factor calculation.

3. MRD Flowgates are included in the Book of Flowgates that is posted on the NERC web site.

DFWG Flowgate Review

RELIABILITY COORDINATORS may request the DFWG to review and revise the list of PERMANENT FLOWGATES in accordance with the guidelines detailed in Section B. A standardized approach should be used for reviewing all flowgates. The Book of Flowgates will be kept up to date so that it is consistent with the latest IDC base case. DFWG will generally not review TEMPORARY FLOWGATES unless:

- They are used for a TLR greater than Level 1.
- A flowgate is repeatedly created as a Temporary Flowgate.
- A request is made to convert a Temporary Flowgate to a Permanent Flowgate.

INFORMATIONAL FLOWGATES are not to be used for TLR. The review for INFORMATIONAL FLOWGATES may differ from that of a Reliability Flowgate. DFWG review of Reliability Flowgates for thermal purposes may differ from the review of Reliability Flowgates used for voltage or dynamic stability purposes.

Flowgate review may require the responsible RELIABILITY COORDINATOR to provide additional flowgate detail as determined by DFWG.

Reliability Coordinator Reference Document

Approved by Operating Committee.

March 23–25, 2004

Subsections

A. System Data Exchange (SDX) – Eastern Interconnection Only

The SDX is the NERC approved method for the submittal of operational planning horizon data that is required in NERC Policy 9 Subsection A – Next Day Operations Planning Process, Requirement 1. This data is shared throughout the interconnection(s) for use in ATC calculations and the NERC TLR application, the Interchange Distribution Calculator (IDC) and power system studies. The data is required to be submitted hourly for each Control Area and received by the SDX system by 20 minutes prior to the reporting hour. Updates to these data may be submitted more frequently. Additional data submittals are required per the guidelines below. It is the intent of the SDX to provide the most current power system data to the NERC and Reliability power system applications that rely on the data for accurate calculations.

Data Considerations

The information type and format that must be adhered to in an SDX submittal is defined in the NERC SDX Data Specification. It is required that the following criteria also be followed when issuing an SDX data submittal.

1. All generation status changes for generation summing to 20 MW or higher on a bus must be reported for each Control Area.

1.1. Generation elements must be submitted in the PSSE bus name format and be contained in the most recent IDC application model. The most recent IDC model can be found at the NERC Distribution Factor Working Group (DFWG) website.

1.2. This data improves the accuracy of the calculations in the IDC and ATC applications with special emphasis given to the Network Integration (NI) transmission service and service to Native Load (NL) responsibility calculation in the IDC.

1.3. Additional generation data may be submitted at the Reliability Coordinators desire. The SDX format and application will not prohibit the submittal of generation of all levels that is contained in the IDC model.

2. All transmission status changes 100 kV or higher must be reported for each Control Area.

2.1. Transmission elements must be submitted in the PSSE bus name format of the most recent IDC application model. The most recent model can be found at the NERC Distribution Factor Working Group (DFWG) website.

2.2. This requirement improves the accuracy of the calculations in the IDC and ATC applications.

2.3. Additional transmission data may be submitted at the Reliability Coordinators desire. The SDX format and application will not prohibit the submittal of transmission of all kV levels that is contained in the IDC model.

3. The "Daily" "Hourly", "Weekly" and "Monthly" loads along with the "Generation" and "Transmission" status changes must be updated as a minimum for each Control Area, as indicated below.

3.1. The "Daily" table, which will be updated daily, will contain seven days of daily peak data beginning with current day. The peak hour of the day will also be specified. This data is required by all Reliability Coordinators to promote coordination in the interconnection.

3.2. The data for the "Hourly" table, which will be updated hourly, will be provided for each hour from current hour until midnight tomorrow (i.e. 25-48 hours). But the hourly data set can contain more than 25-48 hours if the RC so desires.

3.3. The "Weekly" table, which will be updated weekly, will contain four weeks of peak data beginning with the current week. The data should be submitted using the Monday of each week as the weekly identifier.

3.4. The "Monthly" table, which will be updated monthly, will contain 12 months of peak data beginning with the current month. The data should be submitted using day one of the month as the monthly identifier.

3.5. Generation and Transmission status changes, as indicated in the preceding sections, will be updated hourly.

This requirement improves the accuracy of the calculations in the IDC and ATC applications and reliability studies in the interconnection.

4. The Phase Shifter Tap Setting section of the file will be used to allow those entities with phase shifters to communicate the current tap settings. This information will be used by the NERC IDC to more accurately model phase shifters and their impact on the power system.

4.1. This section is optional to those entities that do not have phase shifter devices and/or are not utilizing the IDC PAR modeling capability.

4.2. Tap positions should be communicated in or as close to real time as possible. An effective method would be a direct connection through the ICCP, ISN to the SDX and/or IDC application.

5. The Three Winding Transformer section of the file is used to communicate SDX information for three winding transformers. Due to the industry modeling of these devices it is necessary to use this section to communicate the transformer data rather than using the transmission section of the file.

5.1. If the transformer is modeled using the three winding transformer capability of PSSE Version 28 or higher this section must be used to communicate the needed SDX information about them.

6. The Element Group section of the file is used to communicate SDX information about multiple power system elements using one name or identifier.

6.1. The element groups must be set up in the NERC SDX application database prior to using this section of the file. The SDX application will recognize the element group and communicate the appropriate element information to the NERC IDC.

6.2. Element groups are typically used to help the SDX user outage several power system elements at one time (i.e. Bus outages, transformer/generation combinations etc.)

6.3. Refer to the NERC SDX application at http://sdx.mcg.nerc.com for element group set up.

7. The SDX uses several status codes to represent the state of a power system element. These status codes are inserted into the SDX data file in the "Status" field for each power system element section. If the "Status" field does not contain one of the following status codes it will create an error for the entry.

7.1. Each SDX user is Required to select one of the four following status indicators for each power system SDX entry:

Note: A SDX element will automatically be placed back to the base case status when the element entry is removed from the file submittal or the entry expires.

7.1.1. "O" – Out Of Service for the time stated

- The NERC IDC application will take the element out of service for the time stated.

7.1.2. "I" – In-Service for the time stated

- The NERC IDC application will place the element in service for the time stated.
- It is not necessary to use this status each time an element is put back in service from an outage state. The status is meant to indicate a change in normal status for an element (i.e. normally offline transmission and/or generation that is put in service for a specified time).

7.1.3. "P" – Partially Limited and Derated to a level less than its maximum.

- The NERC IDC Application will not recognize Partially Limited units for its calculations.
- This data is very crucial to other Power System studies and the MW entry should indicate the available MW output of the unit.

7.1.4. "F" – Forced Out of Service for the time stated

- This will cause the NERC IDC to take the element out of service for calculations.
- When this status is selected the outage is also communicated and posted to the NERC RCIS based on the following criteria:
  a. Transmission elements 230 kV and above
  b. Generators 300 MW capacity and above
  c. These forced outages will be posted to the RCIS within one hour of the status change.

7.2. The following additional status indications are available for the SDX user to further clarify the type of SDX entry that is being submitted. These status indicators are recommended to be used when appropriate in place of the required statuses above.

7.2.1. "SS" – Offline but can be brought on-line in 3 or more hours-Standby Slow

- This will cause the NERC IDC application to take the element out of service for calculations.

7.2.2. "SF" – Offline but can be brought on-line in one to three hours – Standby Fast

- This will cause the NERC IDC application to take the element out of service for calculations.

7.2.3. "PS" – The Element is Pumping and is acting like a load rather than a generator for the time stated

- This will cause no action in the NERC IDC until a later date and can be used by SDX users for other power system studies.

7.2.4. "SVC" – The element is out of service for the time stated and is a Static Var Compensator

- This will cause the NERC IDC application to take the generator out of service for calculations.

7.2.5. "HT" – Hot Line work-Indicates that there is work that is taking place on the element while it is in-service

- This will have no action taken by the NERC IDC application for their calculations

8. Direct entry of outages into the IDC application will no longer be supported with the exception of NNL generation status during a TLR Level 5 event. There is a link provided to the NERC SDX system to accommodate outage entry.

9. The most recent version of the NERC SDX Data Specification to be complied with.

9.1. The most recent version of the data specification can be found at the NERC SDX website http://www.nerc.com/~filez/sdx.html

This requirement ensures that all applications depending on this data will be able to recognize the format it is submitted in for use in their reliability calculations.

Transferring the SDX File

In order to ensure all Control Areas and Reliability Coordinators have a means to submit the required SDX data, NERC will provide a tool that will adhere to the most recent SDX data specification for submittal. This is a web-based tool that requires a NERC assigned username and password and is only available to signatures of the NERC Data Confidentiality Agreement. Along with the FTP of the Comma Separated File the HTTP and XML data submittals will be accommodated through the use of defined templates. Information on the most recent NERC SDX tool will be available on the NERC website at http://www.nerc.com/~filez/sdx.html.

Information and guidelines on transferring the SDX file will also be provided at the NERC SDX site for entities that wish to submit the SDX file via another means.

By exception some entities may have to work through alternative means to exchange data. This must be agreeable to all parties involved.

B. TLR Level 6 Declarations

Per NERC Appendix 9C1 "Transmission Load Relief Procedures – Eastern Interconnection" it states that if a Reliability Coordinator is unable to mitigate the constraint on a interface using TLR Levels 3, 4, or 5 the Reliability Coordinator has the authority to immediately direct a Control Area to take actions to reduce load to mitigate the critical condition until transactions can be reduced using the TLR method or the system can be returned to a reliable state. This is considered a TLR Level 6 – Emergency Procedures.

In order for all Reliability Coordinators to understand how the Interchange Distribution Calculator (IDC) handles the issuance of a TLR Level 6 this document will describe the 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.

IDC Treatment of TLR Level 6

When a RC issues a TLR Level 6 on a flowgate (FG) in the IDC the application will search the Non-Firm and Firm E-Tags that are in the IDC database for those that affect the FG greater than or equal to 5%. It will create two sets of E-Tags from this list for the Reliability Coordinator to curtail:

1. If the E-Tag has an active MW amount in the current hour it will be curtailed to zero MW.

2. If the E-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 Control Area entities on the E-Tags for Curtailment implementation.

2. Exclude some or all of the E-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 E-Tags are selected the Reliability Coordinator will re-issue the TLR and the list of Excluded E-Tags will appear on the CMR 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 E-Tag curtailments.

3. Disregard some or all of the E-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 E-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 Coordinator 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.

Standard Development Roadmap

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

Development Steps Completed:

1. SAC approves Version 0 SAR for posting (April 14, 2004).
2. SAC approves *Plan for Accelerating Adoption of NERC Reliability Standards* (April 19, 2004).
3. Board approves *Plan for Accelerating Adoption of NERC Reliability Standards* (June 15, 2004).
4. SAC appoints Version 0 Drafting Team (May 7, 2004).
5. SAC approves development of Version 0 standards (June 23, 2004).
6. Drafting Team posts Draft 1 for comment (July 9 to August 9, 2004).
7. JIC assigns Version 0 reliability standards to NERC and business practices to NAESB (August 16, 2004).
8. Drafting Team posts Draft 2 for comment (September 1 to October 15, 2004).

Description of Current Draft:

Draft 3 is to be posted for a 30-day posting prior to balloting the Version 0 standards. This draft includes revisions based on industry comments received during the posting of Draft 2. Changes from Draft 2 are highlighted in the redline copy of Draft 3.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Seek endorsement of NERC technical committees.	November 9–11, 2004
2. First ballot of Version 0 standards.	December 1–10, 2004
3. Recirculation ballot of Version 0 standards.	December 27, 2004 – January 7, 2005
4. 30-day posting before board adoption.	January 8, 2005 – February 8, 2005
5. Board adopts Version 0 standards.	February 8, 2005
6. Effective date.	April 1, 2005

A. Introduction

1. **Title:** **Reliability Coordination – Transmission Loading Relief**

2. **Number:** IRO-006-0

3. **Purpose:** Regardless of the process it uses, the Reliability Coordinator must direct its Balancing Authorities and Transmission Operators to return the transmission system to within its Interconnection Reliability Operating Limits as soon as possible, but no longer than 30 minutes. The Reliability Coordinator needs to direct Balancing Authorities and Transmission Operators to execute actions such as reconfiguration, redispatch, or load shedding until relief requested by the TLR process is achieved.

4. **Applicability**

   4.1. Reliability Coordinators.

   4.2. Transmission Operators.

   4.3. Balancing Authorities.

5. **Proposed Effective Date:** April 1, 2005

B. Requirements

R1. A Reliability Coordinator shall take appropriate actions in accordance with established policies, procedures, authority, and expectations to relieve transmission loading.

R2. A Reliability Coordinator experiencing a potential or actual SOL or IROL violation within its Reliability Coordinator Area shall, at its discretion, select from either a "local" (Regional, Interregional, or subregional) transmission loading relief procedure or an Interconnection-wide procedure.

R2.1. The Interconnection-wide Transmission Loading Relief (TLR) procedure for use in the Eastern Interconnection is provided in Attachment 1-IRO-006-0.

R2.2. The equivalent 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/publications/UFAS_mitigation_plan_rev_2001-clean_8-8-03.pdf.

R2.3. 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/tac/retailisoadhoccommittee/protocols/keydocs/draftercotprotocols.htm.

R3. The Reliability Coordinator may use local transmission loading relief or congestion management procedures, provided the Transmission Operator experiencing the potential or actual SOL or IROL violation is a party to those procedures.

R4. A Reliability Coordinator may implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, the 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 have such use approved by the NERC Operating Committee.

R5. When implemented, all Reliability Coordinators shall comply with the provisions of the Interconnection-wide procedure including, for example, action by Reliability Coordinators in

other Interconnections to curtail an Interchange Transaction that crosses an Interconnection boundary.

R6. During the implementation of relief procedures, and up to the point that emergency action is necessary, Reliability Coordinators and Balancing Authorities shall comply with interchange scheduling standards INT-001 through INT-004.

C. Measures

M1. If required, an investigation will be conducted to determine whether appropriate actions were taken in accordance with established policies, procedures, authority, and expectations to relieve transmission loading, including notifying appropriate Reliability Coordinators and operating entities to curtail Interchange Transactions.

D. Compliance

1. Compliance Monitoring Process

The Regional Reliability Organization or NERC may initiate an investigation if there is a complaint that an entity has not implemented relief procedures in accordance with these requirements.

1.1. Compliance Monitoring Responsibility

Not specified.

1.2. Compliance Monitoring Period and Reset Timeframe

Compliance Monitoring Period: One calendar year.

Reset Period: One month without a violation.

1.3. Data Retention

One calendar year.

1.4. Additional Compliance Information

Not specified.

2. Levels of Non-Compliance

2.1. Level 1: N/A.

2.2. Level 2: N/A.

2.3. Level 3: N/A.

2.4. Level 4: The Reliability Coordinator did not implement loading relief procedures in accordance with the standard.

E. Regional Differences

None identified.

Version History

Version	Date	Action	Change Tracking

Attachment 1-IRO-006-0

Transmission Loading Relief Procedure — Eastern Interconnection

Purpose

This standard defines procedures for curtailment and reloading of Interchange Transactions to relieve overloads on transmission facilities modeled in the Interchange Distribution Calculator. This process is defined in the requirements below, and is depicted in Appendix A. Examples of curtailment calculations using these procedures are contained in Appendix B.

Applicability

This standard only applies to the Eastern Interconnection.

1. Transmission Loading Relief (TLR) Procedure

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.

1.2. Mitigating transmission constraints. A Reliability Coordinator may utilize the TLR Procedure to mitigate potential or actual System Operating Limit (SOL) violations or Interconnection Reliability Operating Limit (IROL) violations on any transmission facility modeled in the IDC.

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.

1.2.1.1. Interchange Transaction priority on tie facilities. The priority of the Interchange Transaction(s) to be curtailed shall be determined by the Transmission Service reserved on the Transmission Service Provider's system who requested the relief.

1.3. Order of TLR Levels and taking emergency action. The Reliability Coordinator shall not be required to follow the TLR Levels in their numerical order (Section 2, "TLR Levels"). 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 redispatching 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.

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).

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.

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.

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.

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.

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.

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.

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.

1.5.1. Use of TLR Procedure with "local" procedures. A Reliability Coordinator shall be allowed to implement a local transmission loading relief or congestion management procedure simultaneously with an Interconnection-wide procedure. However, the Reliability Coordinator shall be obligated to follow the curtailments as directed by the Interconnection-wide procedure. If the Reliability Coordinator desires to use a local procedure as a substitute for Curtailments as directed by the Interconnection-wide procedure, it may do so only if such use is approved by the NERC Operating Committee.

1.6. Consideration of Interchange Transactions. The administration of the TLR Procedure shall be guided by information obtained from the IDC.

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.

1.6.2. Transmission elements not in 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.

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 are made.

1.6.4. Curtailment 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.

1.6.5. Redispatch options. The Reliability Coordinator shall ensure that Interchange Transactions that are linked to redispatch options are protected from Curtailment in accordance with the redispatch provisions.

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.

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

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

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.

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.

1.9.2. Market Committee reviews. 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.

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

2. Transmission Loading Relief (TLR) Levels

Introduction

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.

2.1. TLR Level 1 — Notify Reliability Coordinators of potential SOL or IROL Violations

2.1.1. 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 approach or exceed their SOL or IROL.

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.

2.2. TLR Level 2 — Hold transfers at present level to prevent SOL or IROL Violations

2.2.1. 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.

2.2.2. **Holding procedures**. The Reliability Coordinator shall be allowed to hold the implementation of any additional Interchange Transactions that are at or above the Curtailment Threshold. However, the Reliability Coordinator should allow additional Interchange Transactions that flow across the Constrained Facility if their flow reduces the loading on the Constrained Facility or has a Transfer Distribution Factor less than the Curtailment Threshold. All Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start.

2.2.3. TLR Level 2 is a transient state, which requires a quick decision to proceed to higher TLR Levels (3 and above) to allow Interchange Transactions to be implemented according to their transmission reservation priority. The time for

being in TLR Level 2 should be no more than 30 minutes, with the understanding that there may be circumstances where this time may be exceeded. If the time in TLR Level 2 exceeds 30 minutes, the Reliability Coordinator shall document this action on the TLR Log.

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

2.3.1. 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.

2.3.2. Reallocation procedures to allow Interchange Transactions using higher priority Point-to-Point Transmission Service to start. The Reliability Coordinator with the constraint shall give preference to those Interchange Transactions using Firm Point-to-Point Transmission Service, followed by those using higher priority Non-firm Point-to-Point Transmission Service as specified in Section 3. "Interchange Transaction Curtailment Order." Interchange Transactions that have been held or curtailed as prescribed in this Section shall be reallocated (reloaded) according to their Transmission Service priorities when operating conditions permit as specified in Section 6. "Interchange Transaction Reallocation During TLR Level 3a and 5a."

2.3.2.1. The Reliability Coordinator shall displace Interchange Transactions with lower priority Transmission Service using Interchange Transactions having higher priority Non-firm or Firm Transmission Service.

2.3.2.2. The Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another Interchange Transaction having the same priority Non-firm Transmission Service.

2.3.2.3. If there are insufficient Interchange Transactions using Non-firm Point-to-Point Transmission Service that can be curtailed to allow for Interchange Transactions using Firm Point-to-Point Transmission Service to begin, the Reliability Coordinator shall proceed to TLR Level 5a.

2.3.2.4. The Reliability Coordinator shall reload curtailed Interchange Transactions prior to allowing the start of new or increased Interchange Transactions.

2.3.2.4.1. Interchange Transactions whose tags were submitted prior to the TLR Level 2 or Level 3a being called, but were subsequently held from starting, are considered to have been

curtailed and thus would be reloaded the same time as the curtailed Interchange Transactions.

2.3.2.5. The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions on a pro-rata basis.

2.3.2.6. The Reliability Coordinator shall consider transactions whose tags meet the approved tag submission deadline for Reallocation for the upcoming hour. Tags submitted after this deadline shall be considered for Reallocation the following hour.

2.4. TLR Level 3b — Curtail Interchange Transactions using Non-Firm Transmission Service Arrangements to mitigate a SOL or IROL Violation

2.4.1. 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 security 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.

2.4.2. Holding new Interchange Transactions. The Reliability Coordinator shall hold all new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold during the period of the SOL or IROL Violation. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start if they are submitted to the IDC within specific time limits as explained in Section 7. "Interchange Transaction Curtailments during TLR Level 3b."

2.4.3. Curtailment procedures to mitigate an SOL or IROL. The Reliability Coordinator shall curtail Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold as specified in Section 3, "Interchange Transaction Curtailment Order.**"**

2.5. TLR Level 4 — Reconfigure Transmission

2.5.1. 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 security limit unless corrective action is taken.

2.5.2. Holding new Interchange Transactions. The Reliability Coordinator shall hold all new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold during the period of the SOL or IROL Violation. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start if they are submitted to the IDC by 25 minutes past the hour or the time at which the TLR

Level 4 is called, whichever is later. See Appendix E, Section E2 – Timing Requirements.

2.5.3. Reconfiguration procedures. Following the curtailment of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold in Level 3b 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 Section 4, "Principles for Mitigating Constraints On and Off the Contract Path".

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

2.6.1. 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.

2.6.2. Reallocation procedures to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to start. The Reliability Coordinator shall use the following three-step process for Reallocation of Interchange Transactions using Firm Point-to-Point Transmission Service:

2.6.2.1. Step 1 — Identify available redispatch options. The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below.

2.6.2.2. Step 2 — The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider's Network Integration Transmission Service and Native Load, as required by the Transmission Provider's filed tariff. This is described in Section 5, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service."

2.6.2.3. Step 3 — Curtail Interchange Transactions using Firm Transmission Service. The Reliability Coordinator shall curtail or reallocate on a pro-

rata basis (based on the MW level of the MW total to all such Interchange Transactions), those Interchange Transactions as calculated in Section 7.2.2 over the Constrained Facilities. (See also Section 6, "Interchange Transaction Reallocation during TLR 3a and 5a.") 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. Available redispatch options will continue to be implemented.

2.7. TLR Level 5b — Curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate an SOL or IROL violation

2.7.1. 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.

2.7.2. The Reliability Coordinator shall use the following three-step process for curtailment of Interchange Transactions using Firm Point-to-Point Transmission Service:

2.7.2.1. Step 1 — Identify available redispatch options. The Reliability Coordinator shall assist the Transmission Operator(s) in identifying those known redispatch options that are available to the Transmission Customer that will mitigate the loading on the Constrained Facilities. If such redispatch options are deemed insufficient to mitigate loading on the Constrained Facilities, the Reliability Coordinator shall proceed to implement these options while proceeding to Steps 2 and 3 below.

2.7.2.2. Step 2 — The Reliability Coordinator shall calculate the percent of the overload on the Constrained Facility caused by both Firm Point-to-Point Transmission Service (at or above the Curtailment Threshold) and the Transmission Provider's Network Integration Transmission Service and Native Load, as required by the Transmission Provider's filed tariff. This is described in Section 5, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service."

2.7.2.3. Step 3 — Curtailment of Interchange Transactions using Firm Transmission Service. At this point, the Reliability Coordinator shall begin the process of curtailing Interchange Transactions as calculated in Section 2.7.2.2 over the Constrained Facilities using Firm Point-to-Point Transmission Service until the SOL or IROL violation has been mitigated. 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 Providers' tariff. Available redispatch options will continue to be implemented.

2.8. TLR Level 6 — Emergency Procedures

2.8.1. 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.

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.

2.9. TLR Level 0 — TLR concluded

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 reestablished first if possible.

3. Interchange Transaction Curtailment Order for use in TLR Procedures

3.1. Priority of Interchange Transactions

3.1.1. Interchange Transaction curtailment priority shall be determined by the Transmission Service reserved over the constrained facility(ies) as follows:

Transmission Service Priorities

Priority 0. Next-hour Market Service — NX*

Priority 1. Service over secondary receipt and delivery points — NS

Priority 2. Non-Firm Point-to-Point Hourly Service — NH

Priority 3. Non-Firm Point-to-Point Daily Service — ND

Priority 4. Non-Firm Point-to-Point Weekly Service — NW

Priority 5. Non-Firm Point-to-Point Monthly Service — NM

Priority 6. Network Integration Transmission Service from sources not designated as network resources — NN

Priority 7. Firm Point-to-Point Transmission Service — F and Network Integration Transmission Service from Designated Resources — FN

3.1.2. The curtailment priority for Interchange Transactions that do not have a Transmission Service reservation over the constrained facility(ies) shall be defined by the lowest priority of the individual reserved transmission segments.

3.2. Curtailment of Interchange Transactions Using Non-firm Transmission Service

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

3.2.1.1. TLR Level 3a. Enable Interchange Transactions using a higher Transmission reservation priority to be implemented, or

3.2.1.2. TLR Level 3b. Mitigate an SOL or IROL violation.

3.3. Curtailment of Interchange Transactions Using Firm Transmission Service

3.3.1. 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:

3.3.1.1. 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, or

3.3.1.2. 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.

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

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.

4.1. Constraints ON the Contract Path

4.1.1. 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.

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.)

4.1.2. 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.

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.

4.2. Constraints OFF the Contract Path

4.2.1. 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.

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.

4.2.2. 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.

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 redispatch, 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.

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

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.

5.1. 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:

5.1.1. 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.

5.1.2. For Firm Point-to-Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold.

5.1.3. 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.

5.1.4. 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.

5.1.5. 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.

5.1.6. The implementation of the Per Generator Method shall be based on transmission and generation information that is readily available.

5.2. 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.

6. Interchange Transaction Reallocation During TLR Levels 3a and 5a

Introduction

This section provides the details for implementing TLR Levels 3a and 5a, both of which provide a means for Reallocation of Transmission Service.

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. (See **Requirement 2.3, "TLR Level 3a.")** When a TLR Level 3a is in effect, Reliability Coordinators shall reallocate Interchange Transactions according to the Transactions' Transmission Service Priorities. Reallocation also includes the orderly reloading of Transactions by priority when conditions permit curtailed Transactions to be reinstated.

TLR Level 5a accomplishes Reallocation by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro-rata basis to allow new Interchange Transactions using Firm Point-to-Point Transmission Service to begin, also on a pro-rata basis. (See **Requirement 2.6, "TLR Level 5a.")**

6.1. Requirements

The basic requirements for Transaction Reallocation are as follows:

6.1.1. When identifying transactions for Reallocation the Reliability Coordinator shall normally only involve Curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service during TLR 3a. However, Reallocation may be used during TLR 5a to allow the implementation of additional Interchange Transactions using Firm Transmission Service on a pro-rata basis.

6.1.2. When identifying transactions for Reallocation, the Reliability Coordinator shall only consider those Interchange Transactions at or above the Curtailment Threshold for which a TLR 2 or higher is called.

6.1.3. When identifying transactions for Reallocation, the Reliability Coordinator shall displace Interchange Transactions utilizing lower priority Transmission Service with Interchange Transactions utilizing higher Transmission Service Priority.

6.1.4. When identifying transactions for Reallocation, the Reliability Coordinator shall not curtail Interchange Transactions using Non-firm Transmission Service to allow the start or increase of another transaction having the same Non-Firm Transmission Service Priority (marginal "bucket").

6.1.5. When identifying transactions for Reallocation, the Reliability Coordinator shall reload curtailed Interchange Transactions prior to starting new or increasing existing Interchange Transactions.

6.1.6. Interchange Transactions whose tags were submitted prior to the TLR 2 or 3a being called, but were subsequently held from starting because they failed to meet the approved tag submission deadline for Reallocation (see Section 6.2, "Communications and Timing Requirements"), shall be considered to have been curtailed and thus would be eligible for reload at the same time as the curtailed Interchange Transaction.

6.1.7. The Reliability Coordinator shall reload or start all eligible Transactions on a pro-rata basis.

6.1.8. Interchange Transactions whose tags meet the approved tag submission deadline for Reallocation (see Section 6.2, "Communications and Timing Requirements") shall be considered for Reallocation for the upcoming hour. (However, Interchange Transactions using Firm Point-to-Point Transmission Service shall be allowed to start as scheduled.) Interchange Transactions whose tags are submitted to the IDC after the approved tag submission deadline for Reallocation shall be considered for Reallocation the following hour. This applies to Interchange Transactions using either Non-firm Point-to-Point Transmission Service or Firm Point-to-Point Transmission Service. If an Interchange Transaction using Firm Interchange Transaction is submitted after the approved tag submission deadline and after the TLR is declared, that Transaction shall be held and then allowed to start in the upcoming hour.

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.

6.2. Communication and Timing Requirements

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.

6.2.1. **Time Convention**. In this document, 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.

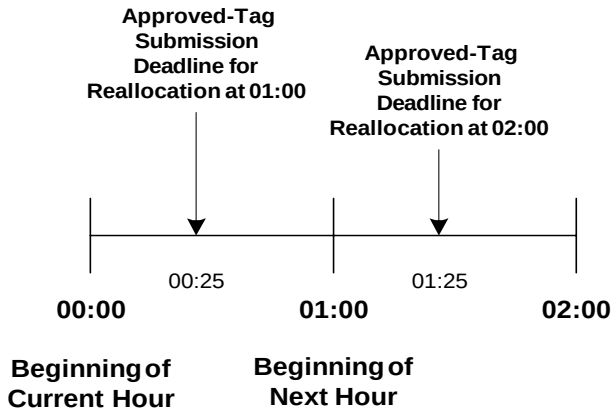


Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation

6.2.2. **Approved tag submission deadline for Reallocation** 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.

6.2.2.1. 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.

6.2.2.2. 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.

6.2.3. 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.

6.2.4. Tag Evaluation Period. Balancing Authorities and Transmission Providers shall evaluate all tags submitted for Reallocation and shall communicate approval or rejection by 00:25.

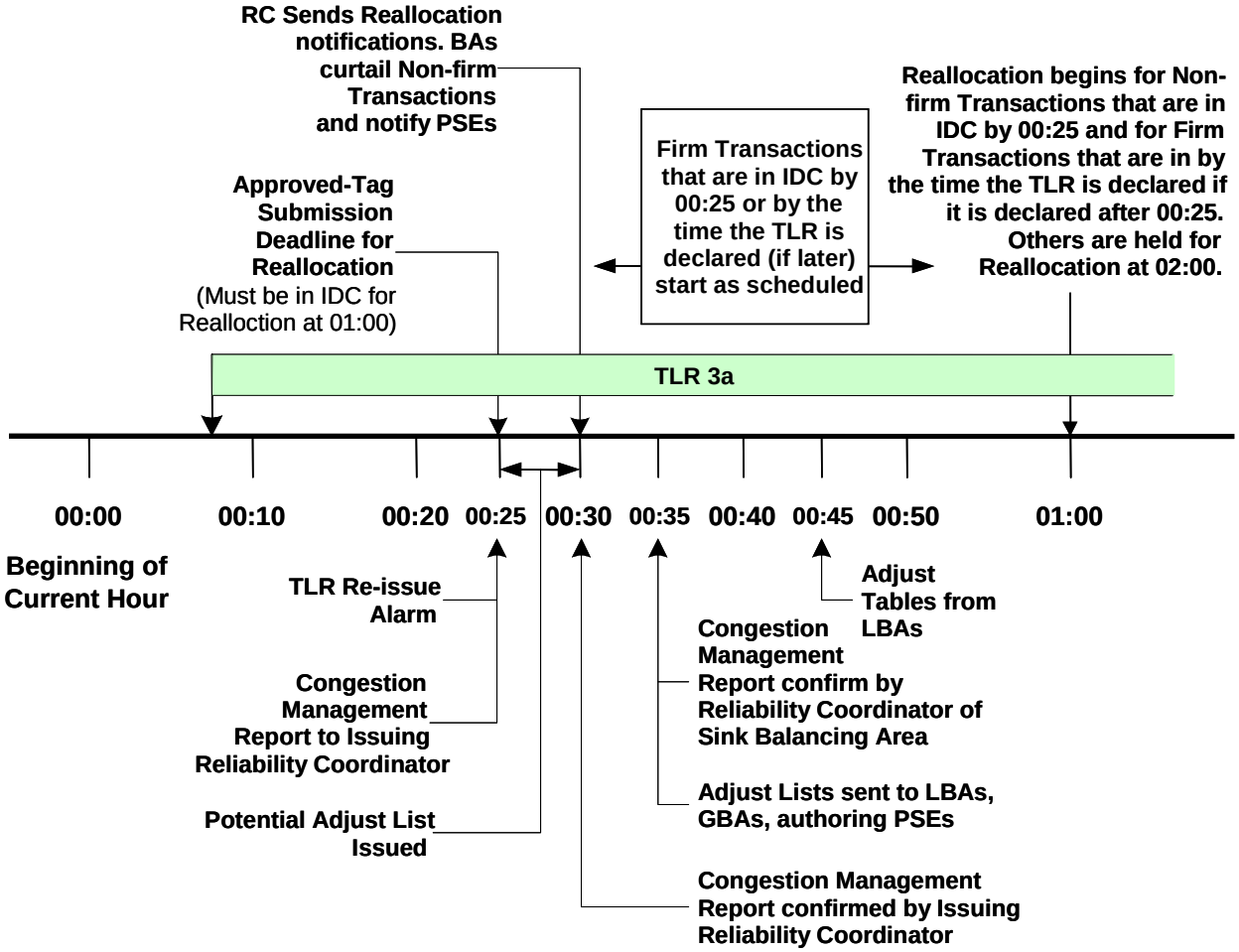


Figure 2 — Reallocation Timing for TLR 3a Called at 00:08

6.2.5. 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:

6.2.5.1. Interchange Transactions that may start, increase, or reload shall have a status of PROCEED, and

6.2.5.2. 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

6.2.5.3. 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).

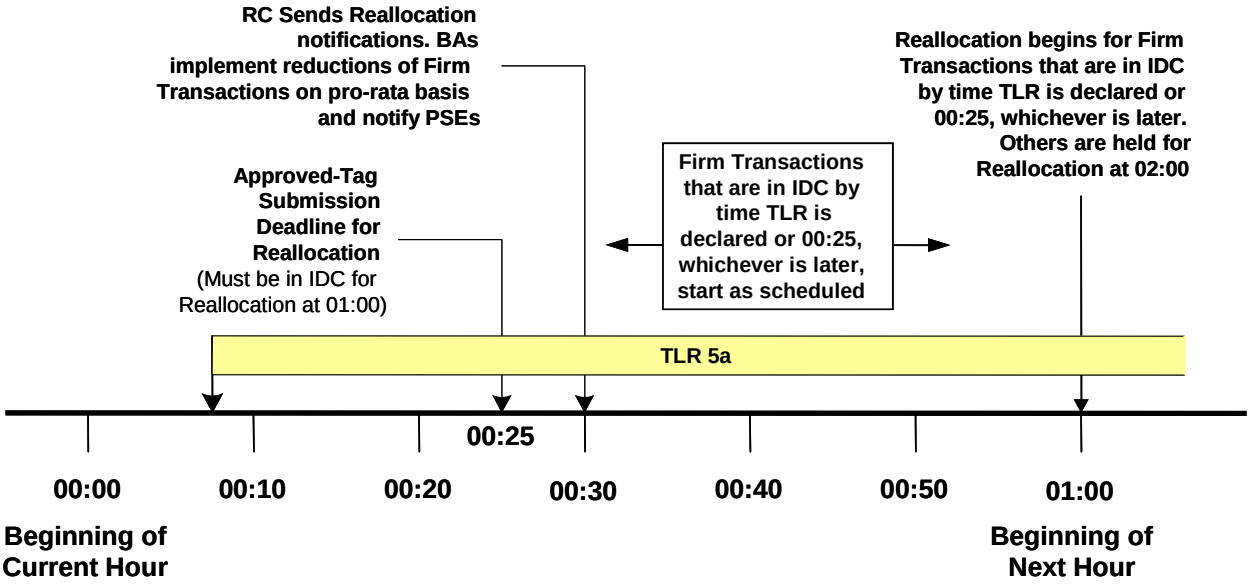


Figure 3 — Reallocation timing for TLR 5a called at 00:08.

6.2.5.4. 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.

6.2.5.5. 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.

6.2.5.6. 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 Transactions using other than Point-to-Point 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.

6.2.5.7. 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.

Additional reporting and communications details on information posted from the IDC to the NERC TLR website are contained in Appendix E.

6.2.6. **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 Transactions. Nevertheless, recognizing the approved tag submission deadline for Reallocation, from a Transmission Customer perspective, it is preferable that the Reliability Coordinator call 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.

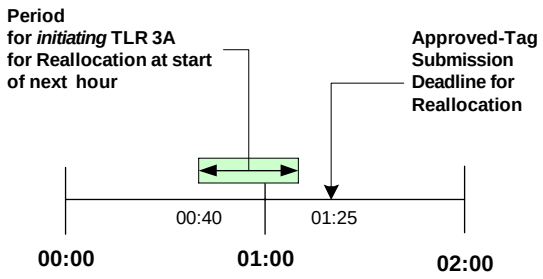


Figure 4. "Ideal" time for issuing TLR 3a for Reallocation at 02:00.

7. Interchange Transaction Curtailments During TLR Level 3b

Introduction

This section provides the details for implementing TLR Level 3b, which curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service to assist the Reliability Coordinator to recover from SOL or IROL violations.

TLR Level 3b curtails Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold. (See **Requirement 2.4, "TLR Level 3b.")**. Furthermore, *all* new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold during the TLR 3b implementation period are halted or held. Transactions using Firm Point-to-Point Transmission Service will be allowed to start if they are submitted to the IDC within specific time limits as explained in Appendix F, "Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service." Those Interchange Transactions using Firm Point-to-Point Transmission Service that are not submitted to the IDC within these time limits will be held.

Requirements

7.1. The Reliability Coordinator shall be allowed to call a TLR 3b at any time to help mitigate a SOL or IROL violation.

7.2. The Reliability Coordinator shall consider only those Interchange Transactions at or above the Curtailment Threshold for curtailment, holding, or halting.

7.3. The Reliability Coordinator shall curtail existing Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to provide the required relief on the Constrained Facility.

7.4. The Reliability Coordinator shall curtail additional Interchange Transactions using Non-firm Point-to-Point Transmission Service to provide transmission capacity for Interchange Transactions using Firm Point-to-Point Transmission Service if those Interchange Transactions using Firm Point-to-Point Transmission Service are scheduled to start during the current hour or the following hour.

7.5. The Reliability Coordinator shall not allow existing Interchange Transactions using Non-firm Point-to-Point Transmission Service that are not curtailed to increase (they may flow at the same or reduced level).

7.6. The Reliability Coordinator shall not reallocate Interchange Transactions using Non-firm Point-to-Point Transmission Service during a TLR 3b.

7.7. The Reliability Coordinator shall allow Interchange Transactions using Firm Point-to-Point Transmission Service to start as explained in Appendix F, "Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service."

7.8. The Reliability Coordinator shall progress to TLR Level 5b as necessary if there is still insufficient transmission capacity for Interchange Transactions using Firm Point-to-Point Transmission Service to start as scheduled after all Interchange Transactions using Non-firm Point-to-Point Transmission Service have been curtailed.

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

7.9.1. Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed, halted, or held during current and next hours.

7.9.2. Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after 00:25 or issuance of TLR 3b (see Case 3 in Appendix F).

7.10. 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.

7.11. The Reliability Coordinator shall be allowed 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.

7.11.1. If the TLR Level 3a is called before the hour 01, then a Reallocation shall be computed for the start of that hour.

7.11.2. Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation (see Requirement 6.2).

Appendices for Transmission Loading Relief Standard

Appendix A. Transaction Management and Curtailment Process.

Appendix B. Transaction Curtailment Formula.

Appendix C. Sample NERC Transmission Loading Relief Procedure Log.

Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service.

Appendix E. How the IDC Handles Reallocation.

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

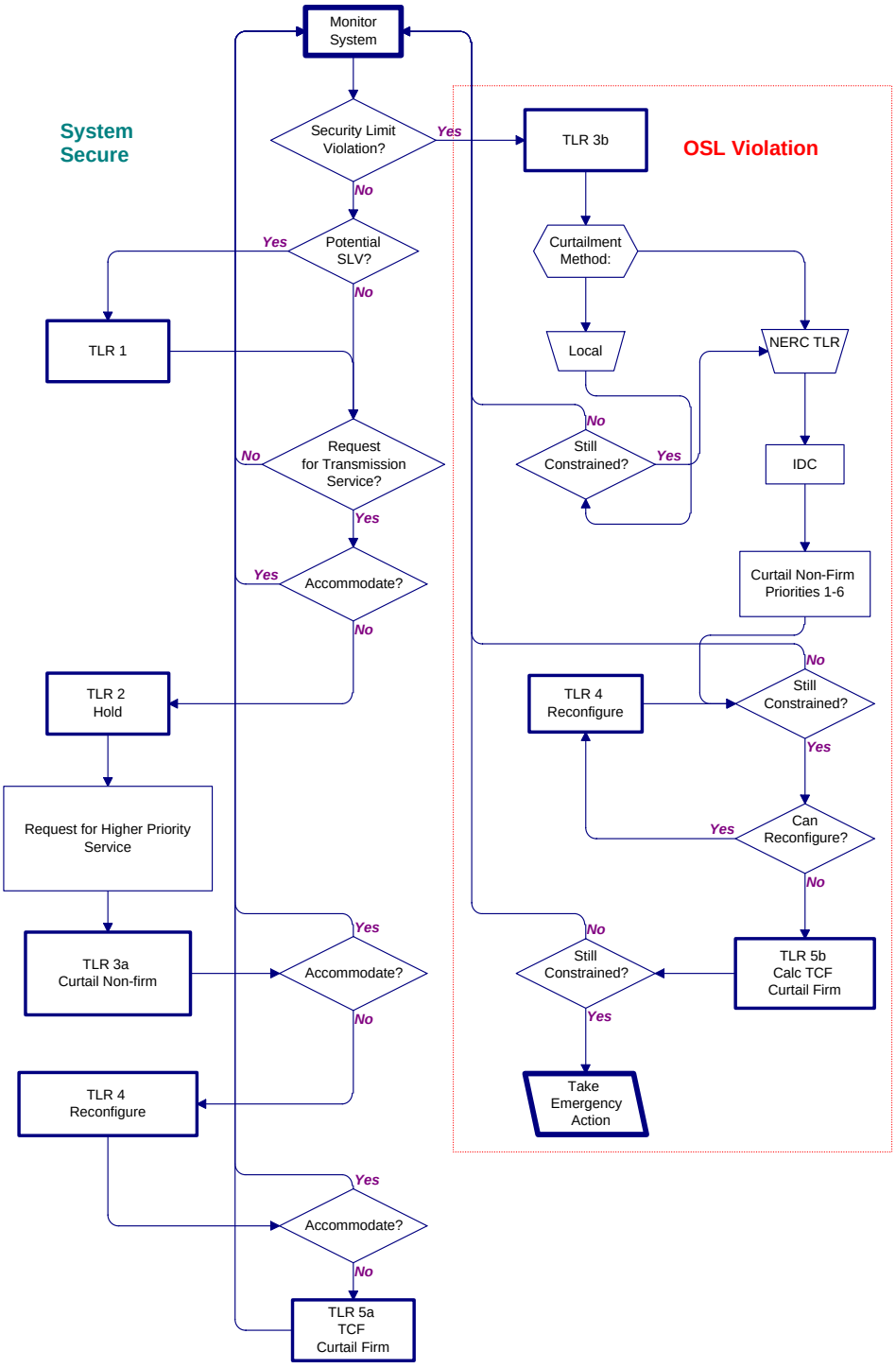
Section E2: Timing Requirements.

Appendix F. Considerations for Interchange Transactions using Firm Point-to-Point Transmission Service.

Appendix G. Examples of On-Path and Off-Path Mitigation.

Appendix A. Transaction Management and Curtailment Process

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



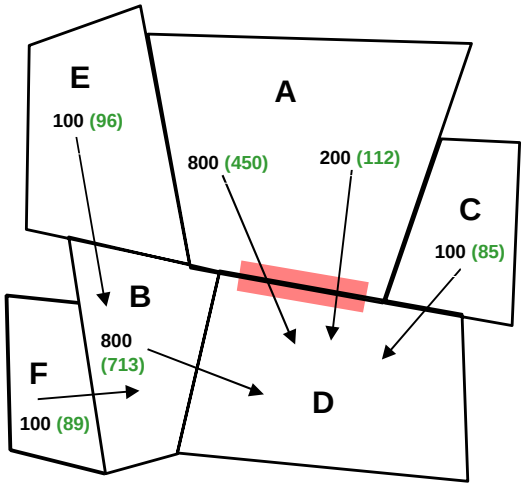
Appendix B. Transaction Curtailment Formula

Example

This example is based on the premise that a transaction should be curtailed in proportion to its Transfer Distribution Factor 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	Now divide by the Distribution Factor to see how much the Transaction must be reduced to yield the result 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								
	1	2	3	4	5	6	7	8	9
Transaction ID	Initial Transaction	Distribution Factor	(1)*(2) Impact On Interface	(2)/(2TOT) Impact weighting factor	(3)*(4) Weighted Max Interface Reduction	(5)*(Relief Requested) /(5 Tot) Interface Reduction	(6)/(2) Transaction Reduction	(1)-(7) New Transaction Amount	(8)*(2) Adjusted Impact On Interface
Example 1									
A-D(1)	800	0.6	480	0.34	164.57	209.73	349.54	450.46	270.27
A-D(2)	200	0.6	120	0.34	41.14	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.09	10.29	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.11	2.29	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.03	0.14	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.09	1.29	1.64	10.92	89.08	13.36
	2100	**1.75**	**760**		**219.71**	**280.00**	**553.45**	**1546.55**	**480.00**
Example 2									
A-D(1)	1000	0.6	600	0.52	313.04	262.16	436.93	563.07	337.84
B-D	800	0.15	120	0.13	15.65	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.17	3.48	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.04	0.22	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.13	1.96	1.64	10.92	89.08	13.36
	2100	**1.15**	**760**		**334.35**	**280.00**	**553.45**	**1546.55**	**480.00**
Example 3									
A-D(1A)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1B)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1C)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(1D)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
A-D(2)	200	0.6	120	0.17	20.28	52.43	87.39	112.61	67.57
B-D	800	0.15	120	0.04	5.07	13.11	87.39	712.61	106.89
C-D	100	0.2	20	0.06	1.13	2.91	14.56	85.44	17.09
E-B	100	0.05	5	0.01	0.07	0.18	3.64	96.36	4.82
F-B	100	0.15	15	0.04	0.63	1.64	10.92	89.08	13.36
	2100	**3.55**	**760**		**108.31**	**280.00**	**553.45**	**1546.55**	**480.00**



Appendix C. Sample NERC Transmission Loading Relief Procedure Log

SAVE FILE DIRECTORY:

NERC TRANSMISSION LOADING RELIEF (TLR) PROCEDURE LOG

FILE SAVED AS: .XLS

INCIDENT:	DATE:	IMPACTED RELIABILITY COORDINATOR:	ID NO:

INITIAL CONDITIONS

Limiting Flowgate (LIMIT)	Rating	Contingent Flowgate (CONT.)	ODF

TLR Levels

0: TLR Incident Canceled
1. Notify Reliability Coordinators of potential problems.
2: Halt additional transactions that contribute to the overload
3a and 3b: Curtail transactions using Non-firm Transmission Service
4. Reconfigure to continue firm transactions if needed.
5a and 5b: Curtail Transactions using Firm Transmission Service.
6: Implement emergency procedures.

Priorities

NX	Next Hour Market Service
NS	Service over secondary receipt and delivery points
NH	Hourly Service
ND	Daily Service
NW	Weekly Service
NM	Monthly Service
NN	Non-firm imports for native load and network customers from non-designated network resources
F	Firm Service

TLR ACTIONS

LEVEL	TIME	Priority	TLR 3,5 No. TX Curtail	TLR 3,5 MW Curtai	MW Flow			COMMENTS ABOUT ACTIONS
					Limiting Element		Cont. Elem't	
					Present	Post Con.	Present	

Appendix D. Examples for Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service

The NERC "**Parallel Flow Calculation Procedure Reference Document**" provides additional information about the criteria used to include generators in the IDC calculation process.

Example of Results of Calculation Method

An example of the output of the IDC calculation of curtailment of firm Transmission Service is provided below for the specific Constrained Facility identified in the *Book of Flowgates* as Flowgate 1368. In this example, a total Firm Point-to-Point contribution to the Constrained Facility, as calculated by the IDC, is assumed to be 21.8 MW.

The table below presents a summary of each Balancing Authority's responsibility to provide relief to the Constrained Facility due to its Network Integration Transmission Service and service to Native Load contribution to the Constrained Facility. 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. See the "**Parallel Flow Calculation Procedure Reference Document**" for additional details regarding the information illustrated in the table (e. g. Scaled P Max and Flowgate NNative Load MW).

In summary, Interchange transactions would be curtailed by a total of 21.8 MW and Network Integration Transmission Service and service to Native Load 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.

Sink Reliability Coordinator	Service Point	Scaled P Max	Flowgate NNative Load MW	Current NNative Load Relief	NNative Load Responsibility		NNative Load 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				**0.0**				

Appendix E. How the IDC Handles Reallocation

The IDC algorithms reflect the Reallocation and reloading principles in this Appendix, 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 website.

A summary of IDC features that support the Reallocation process is provided in Attachment E1. Details on the interface and display features are provided in Attachment E2. Refer to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification* for details about the E-Tag system.

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

The following is a summary of IDC features and E-Tag interface that support Reloading/Reallocation:

Information posted from IDC to NERC TLR website.

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 website and updated as necessary.

2. TLR Constrained Facility status and Transfer Distribution Factors will continue to be posted to NERC TLR website.

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 website. This will provide an indication to the market of priority of Interchange Transactions that may be Reloaded/Reallocated the following hours.

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 does not 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.

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 website 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 and tariff rules.

1. **HOLD.** Permission has not been given for Interchange Transaction to start or increase and 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. Transactions with E-tags submitted to Tag Authority after TLR 2 or higher was declared (post-tagged) will retain HOLD Status until given permission to proceed or E-Tag expires.

2. **CURTAILED**. 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 Interchange Transaction will reload, start, or increase next-hour per Purchasing-Selling Entity's energy schedule as appropriate.

Reallocation/Reloading Priorities

1. Interchange Transaction candidates are ranked for loading and curtailment by priority as per Appendix 9C1, Section E, "Principles for Mitigating Constraints On and Off the Contract Path"]. 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 Statuses.

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.

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:

- Present constrained facility loading, present level of Interchange Transactions, and Balancing Authorities NNative Load responsibility (TLR Level 5a) impacting the Constrained Facility,

- SOLs or IROLs, known interchange impacts and Balancing Authority NNative Load responsibility (TLR Level 5a) on the Constrained Facility the next hour, and

- 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.

E2. Timing Requirements

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 Transactions that start next hour.
2. In order to allow a Reliability Coordinator to declare a TLR Level 3a or 5a at any time during the hour, the TLR declaration and Reallocation/Reloading report distribution will be treated as independent processes by the 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 cannot 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.

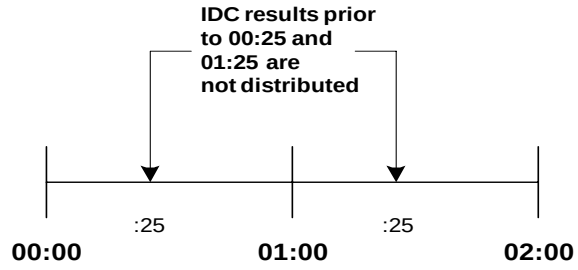


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

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 Subpriority Table, in the **IDC Calculations and Reporting** section below).

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.

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 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 Transactions for the next hour as well as Balancing Authority 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 Transactions to be reloaded, reallocated, or curtailed to make room for the 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 Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-100 MW
Expected Net flow next hour on Facility	850 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	850 MW – 800 MW = 50 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 50 MW = 900 MW

Example 2

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	50 MW
Expected Net flow next hour on Facility	1000 MW
Amount of Transactions using Point-to-Point Transmission Service to hold for Reallocation	1000 MW – 800 MW = 200 MW
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	950 MW – 200 MW = 750 MW

Example 3

Flow to maintain on Facility	800 MW
Expected flow next hour from Transactions using Point-to-Point Transmission Service	950 MW
Contribution from flow next hour from service to Network customers and Native Load	-200 MW
Expected Net flow next hour on Facility	750 MW
Amount of 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 transactions. The Reliability Coordinator-entered requested relief amount will be used by the 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.

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.
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 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.

Priority	Purpose	Explanation and Conditions
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 sub-priority is the next-hour schedule determined by the e-tag ENERGY PROFILE table.

Examples of Interchange Transactions using Non-firm Transmission Service sub-priority settings begin in the **Transaction Sub-priority Examples** following sections.

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 is at or above the Curtailment Threshold will have been curtailed and hence sub-prioritizing is not required.

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 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 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 website, and it is NERC's responsibility to format and publish the report.

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.

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 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 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 Transactions. In order not to overwhelm the Reliability Coordinator with alarms, only those who issued the TLR and those whose 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 new Transactions is required: TLR Level 2, 3a, 3b, 5a and 5b.

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 Transaction is fully curtailed.
2. Interchange Transaction 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 E-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.

Special Tag Status

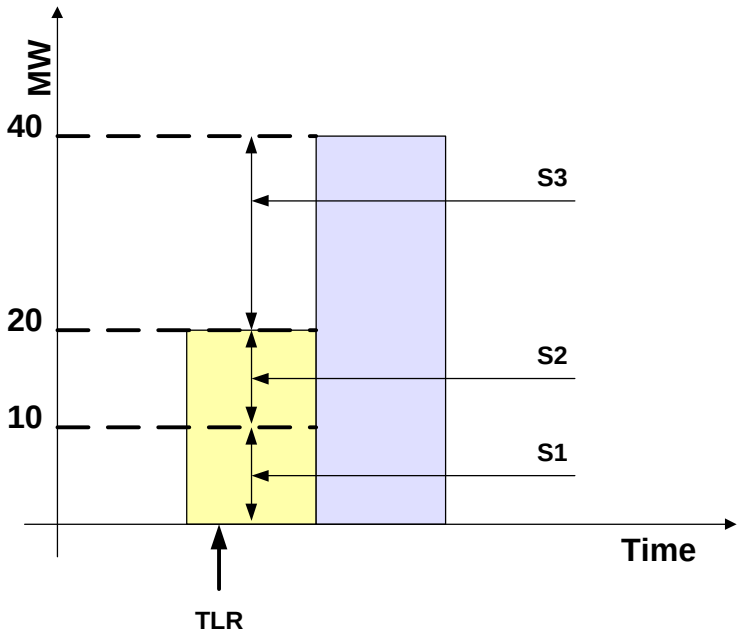
There are cases in which a tag may be marked with a composite state of ATTN_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to 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.

Transaction Sub-Priority Examples

The following describes examples of Interchange Transactions using Non-firm Transmission Service sub-priority setting for a 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 – 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

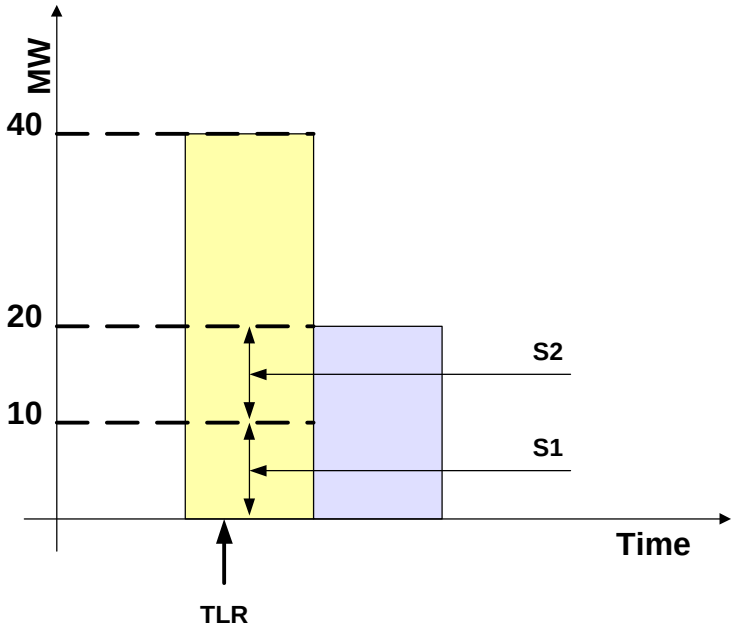


Sub-priorities for Transaction MW:

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

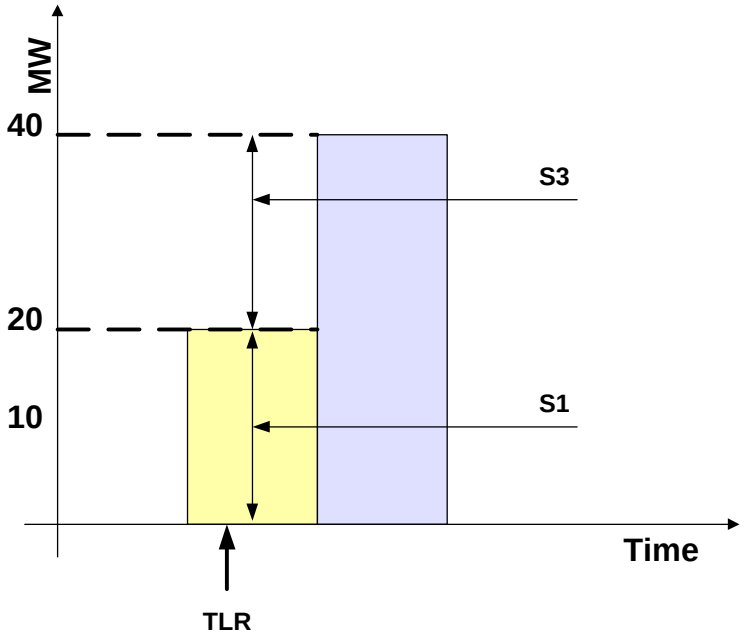


Sub-priorities for Transaction MW:

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

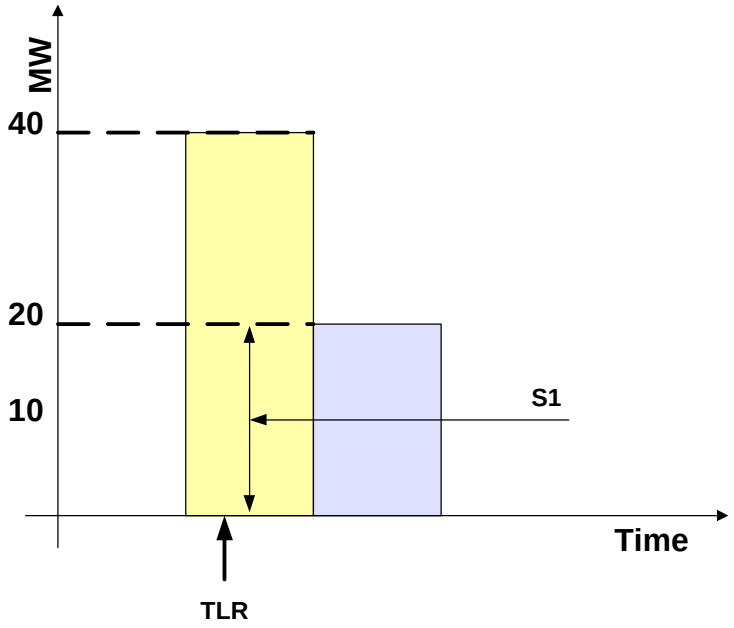
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



Sub-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

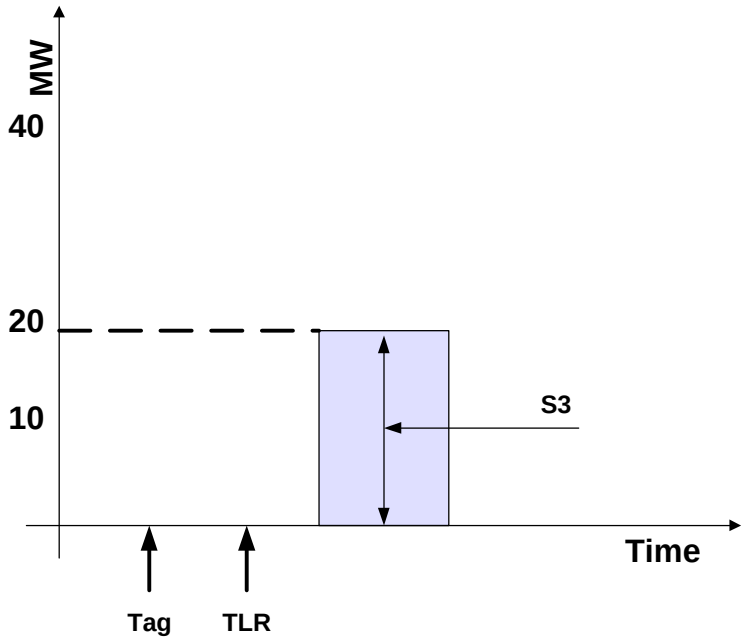


Sub-priorities for Transaction MW:

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 Transaction was scheduled to start

Energy Profile: Current hour	0 MW
Actual flow following curtailment: Current hour	0 MW (Transaction scheduled to start *after* TLR initiated)
Energy Profile: Next hour	20 MW



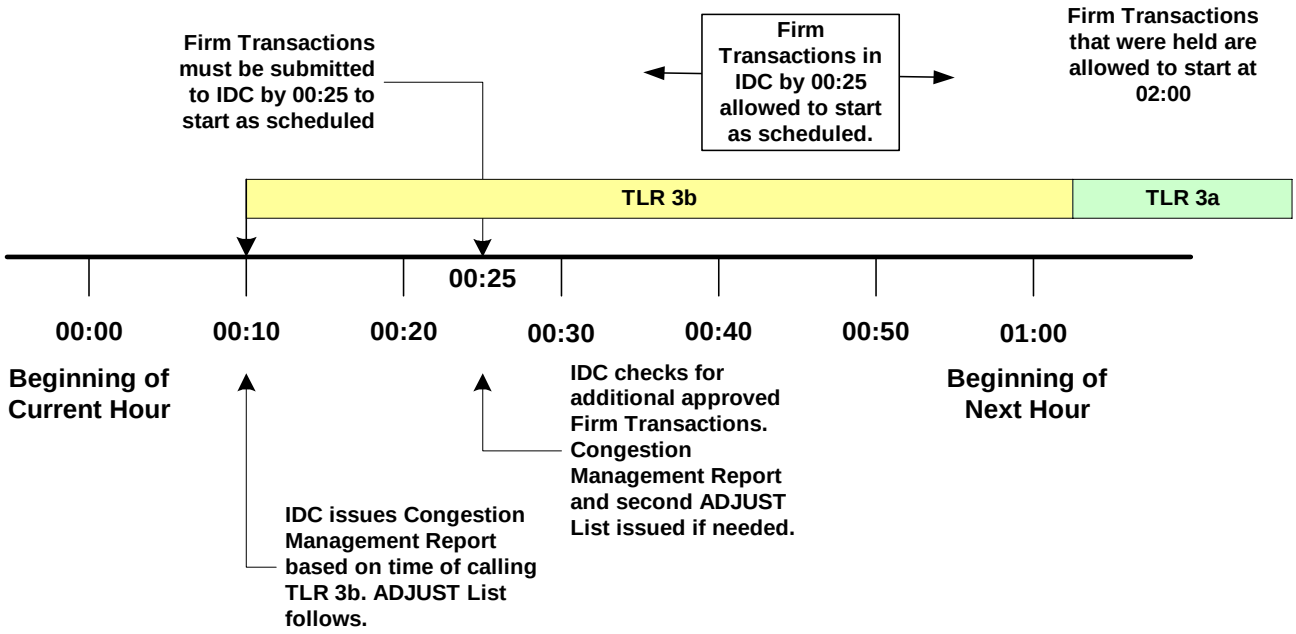
Sub-Priority	*MW Value*	*Explanation*
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

Appendix F. 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.



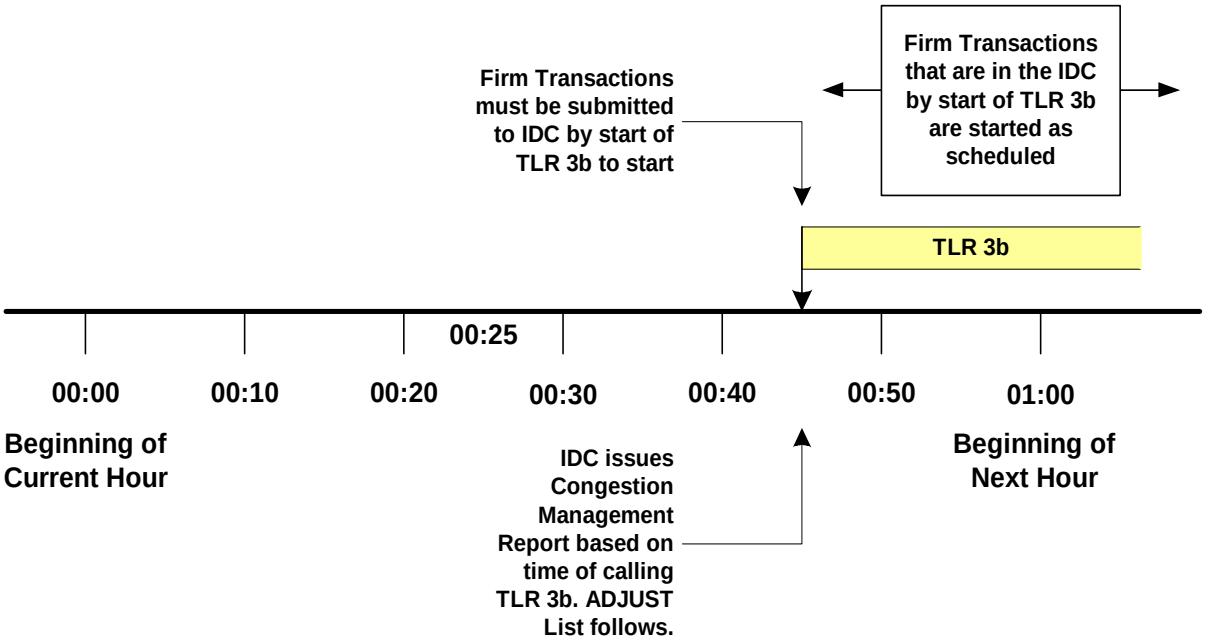
1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List based upon the time the TLR 3b is called. The ADJUST List will include curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as 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.
4. All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.
5. 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.
6. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC after 00:25 will be held.

7. 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.

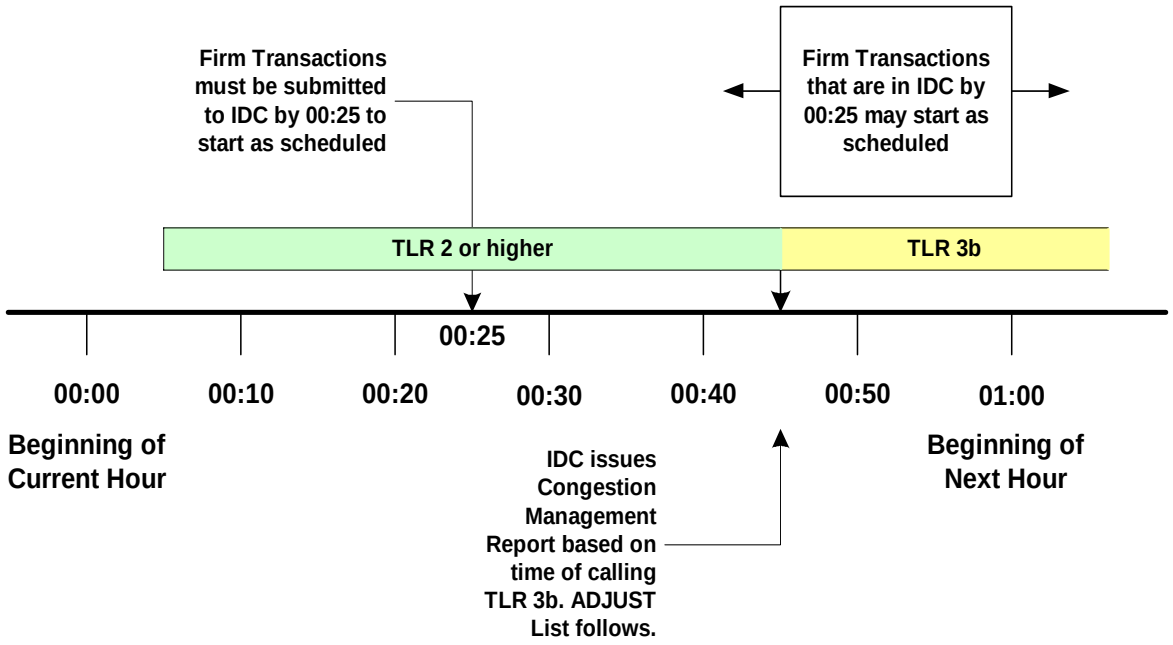
    b. Interchange Transactions using Non-firm Point-to-Point Transmission Service that were held may then be reallocated to start at 02:00.

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.



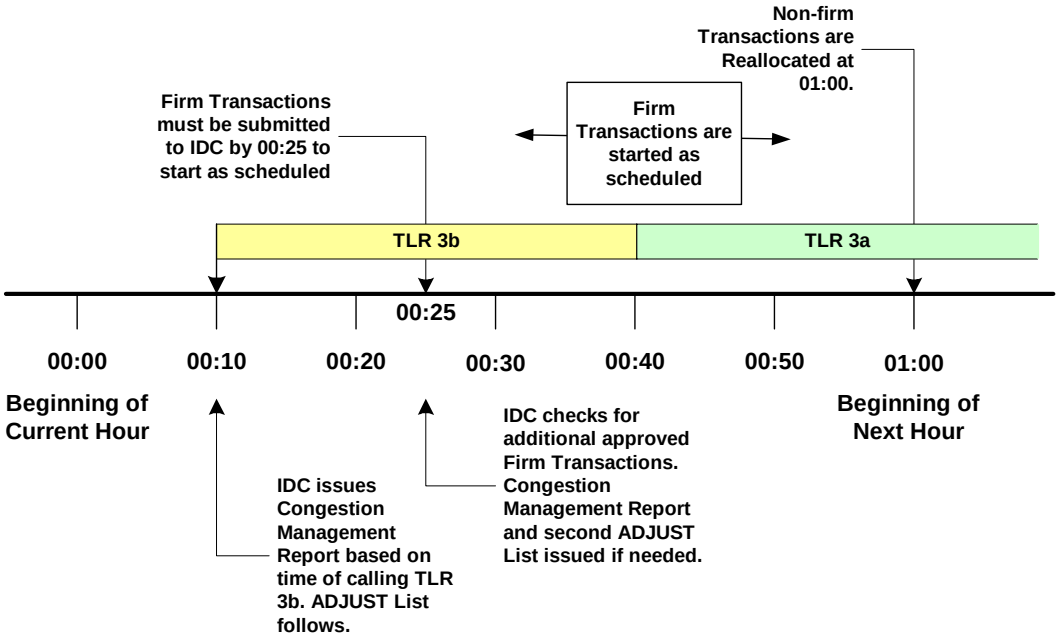
1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service as necessary to allow room for those Interchange Transactions using Firm Point-to-Point Transmission Service to start at as scheduled.
3. All existing or new Interchange Transactions using Non-firm Point-to-Point Transmission Service that are increasing or expected to start during the current hour or next hour will be placed on HALT or HOLD. There is no Reallocation of lower-priority Interchange Transactions using Non-firm Point-to-Point Transmission Service.
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.



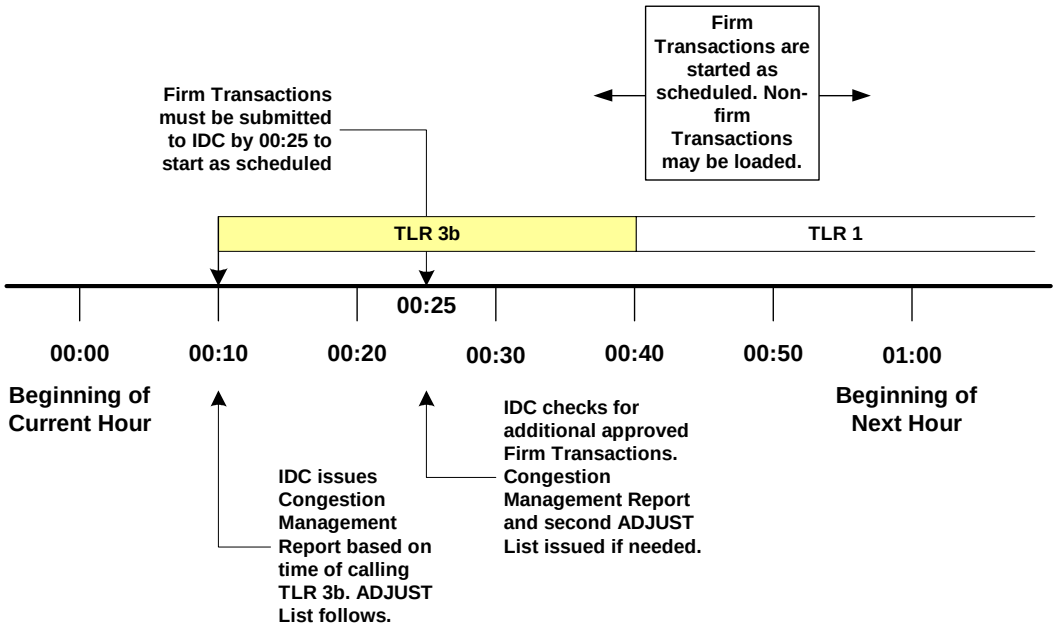
If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

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.

Appendix G. Examples of On-Path and Off-Path Mitigation

Examples

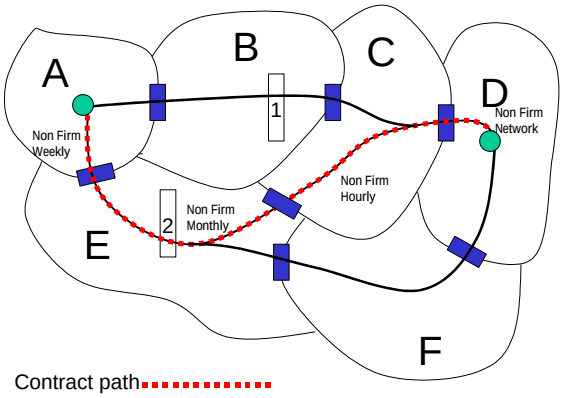
This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. (References to Principles refer to **Requirement 4, "Mitigating Constraints On and Off the Contract Path during TLR**," on the preceding pages.) When Reallocating or curtailing Interchange Transactions using Firm Point-to-Point 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. See **Requirement 5, "Parallel Flow Calculation Procedure for Reallocating or Curtailing Firm Transmission Service during TLR**."

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.

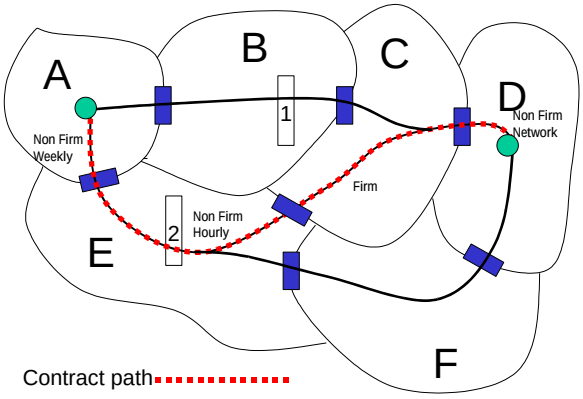
Case 1: E is a non-firm Monthly path; C is non-firm Hourly; E has Constraint at #2

- E may call its Reliability Coordinator for TLR 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 along the Contract Path (Principle 1).

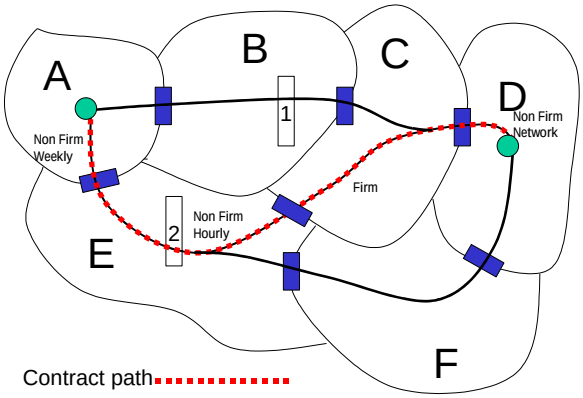


Case 2: E is a non-firm hourly path, C is firm; E has Constraint at #2

- Although C is providing Firm 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 Point-to-Point Transmission Service.
- E may call its Reliability Coordinator for TLR 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 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 (Principle 1).

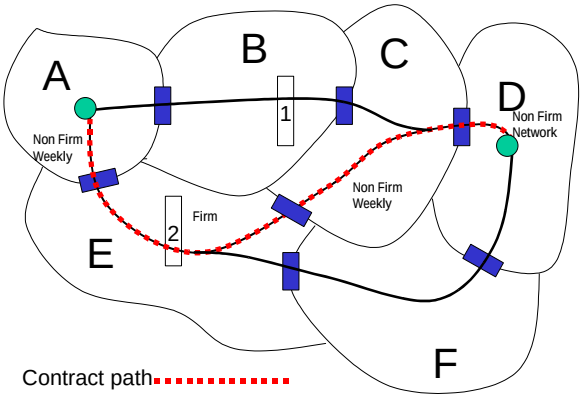


Case 3: E is a non-firm hourly path, C is firm, B has Constraint at #1



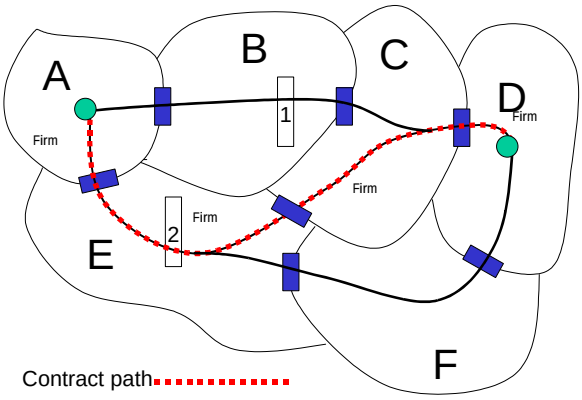
- B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.
- Interchange Transaction A-D may be curtailed by TLR action as though it was being served by Non-firm Hourly Transmission Service, even if it was using firm Transmission Service elsewhere on the path. When the constraint is off the Contract Path, the Interchange Transaction takes on the lowest priority reserved on the Contract Path (Principle 3).

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



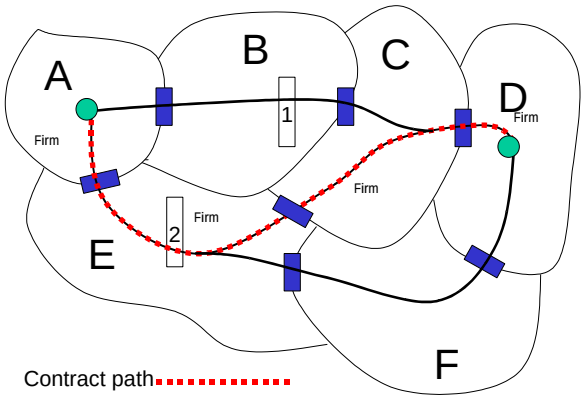
- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- E may then call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.
- E is obligated to try to reconfigure transmission to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

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



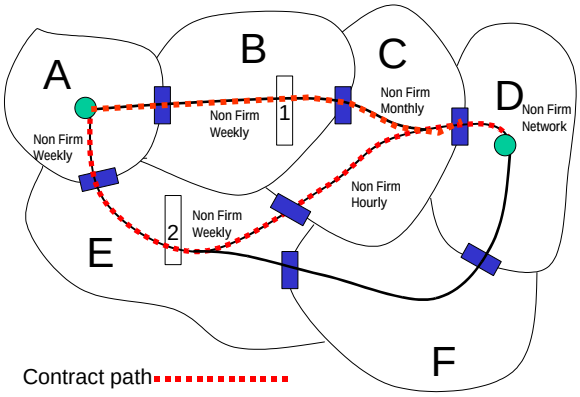
- Interchange Transaction A – D is considered Firm priority for curtailment purposes.
- E may call its Reliability Coordinator for TLR, which would curtail all Interchange Transactions using Non-firm Point-to-Point Transmission Service first.
- E is obligated to curtail Interchange Transactions using Non-firm Point-to-Point 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 (Principle 2).
- A, C, D, may be requested by E to try to reconfigure transmission to mitigate Constraint #2 in E at E's expense (Principle 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 its Reliability Coordinator for TLR 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 (ies) will determine which Transmission Operator(s) will reconfigure their transmission, if possible, to mitigate constraint #1 (Principle 4).
- 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.) (Principle 4)

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. (Principle 1)
- B may call its Reliability Coordinator for TLR to relieve overload at Constraint #1.
- If both A – D Interchange Transactions have the same Transfer Distribution Factors 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).

Item 7. Other Topics for Subcommittee Discussion

Action

Discussion

Background

The subcommittee will also need to deal with other topics related to the implementation of the TLR procedure. These include:

a. **Current TLR curtailment threshold.** The distribution factor threshold is currently set at 5%. Some argue that this is too low and curtails a great number of transactions to achieve a small reduction of flows over the constrained facilities. Others argue that those transactions under the 5% threshold are "firmer than firm" and yet still contribute to transmission constraints.

b. **Current TLR waivers and field-tests in effect**.

- **PJM and MISO.** "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" 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 will be separated into their appropriate priorities and provided to the IDC by the RTO. The market flows will then be represented and made available for curtailment under the appropriate TLR Levels."

- **Alliant West and Entergy.** Allows these Transmission Service Providers to use a 3% curtailment threshold for a specified set of flowgates.

c. **IDC granularity**. The current plan is to implement Option 1 of the IDC Granularity Task Force recommendation by June 30, 2005, and Option 3 by September.

d. **PJM market flow calculation and TLR credit.** PJM has approached the Operating Committee and Market Committee with a request to be given MW credit for its day-ahead dispatch when responding to the TLR 5a or 5b.

e. **Dynamic Schedules.** North Carolina Electric Membership Corporation has asked NERC to reconsider how dynamic schedules are tagged and managed during TLR declarations. The Operating Reliability Subcommittee is looking into this matter.

Item 8. TLR "Tools" and Services

Action

Discussion

The TLR procedure requires a number of supporting operator tools and services that NERC currently supports. Some of these tools and services incorporate business practices in their calculation algorithms, while others are mostly to ensure reliability.

The subcommittee will need to review each of these tools and services to determine:

1. The business practices that may be embedded in the algorithms, and

2. How changes are handled, from both project management and funding perspectives.

Interchange Distribution Calculator

The IDC is the TLR "engine" that includes 1.) distribution factors for the flowgates that are contained in the Book of Flowgates, and 2.) a power flow calculator that uses these distribution factors, transmission configuration provided by the System Data Exchange and E-Tags, and 3.) user interfaces.

The Interchange Distribution Calculator Working Group, which reports to the Operating Reliability Subcommittee, maintains the IDC, approves change orders, and provides advice to the Operating Reliability Subcommittee and Reliability Coordinator Working Group on system modeling and transaction curtailment options.

NERC Central Repository for Security Events Web page

The CRC web page https://www.nerc.net/crc/ provides information on current TLR events plus links to related information, such as system flows, distribution factor viewer, and flowgate changes. The NERC staff maintains this web page under the direction of the Reliability Coordinators.

TLR Logs

The Interchange Distribution Calculator automatically prepares a TLR log entry for each TLR event. These logs are listed at http://www.nerc.com/~filez/Logs/index.html

System Data Exchange

The SDX is the NERC-approved method for the submittal of operational planning horizon data that is required in NERC Policy 9, Subsection A – Next Day Operations Planning Process, Requirement 1. This data is shared throughout the Interconnection(s) for use in ATC calculations, **the Interchange Distribution Calculator,** and power system studies. The data is required to be submitted hourly for each control area and received by the SDX system by 20 minutes prior to the reporting hour. Updates to these data may be submitted more frequently. Additional data submittals are required per the guidelines below. It is the intent of the SDX to provide the most current power system data to the NERC and Reliability power system applications that rely on the data for accurate calculations.

Item 9. Next Meetings and Agendas

Before adjourning, the subcommittee needs to set its next agenda and meeting date.

This may also be the time to set its timeline for completing the objectives that the subcommittee set in agenda item 2.