



TLR General Update

701 City Center Drive
Carmel, Indiana 46032
October 3, 2006

Minutes

Administrative

David Zwergel led the welcome and introductions. Bill Lohrman reviewed the NERC antitrust guidelines and reviewed the minutes of the September 11, 2006 conference call.

Attendance

Daryn Barker, E.ON US	Jim Busbin, Southern Company
Joel Dison, Southern Company Generation	Dennis Harrison, Prague Power LLC
DeDe Kirby, NAESB (via conference call)	Frank Koza, PJM
Tom Littleton, Oklahoma Municipal Power Authority	Sue Mangum-Goins, TVA
Dave Marton, FirstEnergy	Kathy York, TVA
David Zwergel, Midwest ISO	Bill Lohrman, Prague Power LLC

Review of Industry Comments

The TLR SAR Drafting Team completed its review of industry comments that it had worked on during the September 11, 2006 conference call. (**Exhibit A**)

Review of IRO-006 Attachment 1 split of Reliability Standard and Business Practice Aspects

The TLR SAR Drafting Team completed its review of split of reliability standard and business practice aspects included in Attachment 1 of IRO-006. Those portions of the attachment that had been designated as business practices by the Joint NERC NAESB TLR Working Group were highlighted in gray. (**Exhibit B**) Joel Dison and Kathy York were to provide cross references to the NAESB TLR business practice, which have been included in Exhibit B.

IRO-006 SAR Update

Based on the discussions during the meeting and progress made to date by the NERC TLR SAR drafting team, the general update was revised, and is attached as both a clean version (**Exhibit C**) and a redlined version (**Exhibit D**).

Next Steps

The group agreed that the SAR was ready for submittal to the NERC Standards Committee to request authorization to proceed with standard development. The SAR drafting team (**Exhibit E**) indicated that it would like to be included as members of the standard drafting team. The group established tentative meeting dates:

November 6, 2006	Carmel, Indiana at Midwest ISO — 9 a.m.–5 p.m.
December 5, 2006	Houston, Texas — 9 a.m.–5 p.m. (try for same hotel as NERC Planning and Operating Committees)
January 10–11, 2006	Dallas/Houston — noon to noon

The meeting was adjourned.

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Manager of Standards, Mark Ladrow at 609-452-8060 or at mark.ladrow@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

1. Do you believe there is a reliability need for this proposed standard change? If not, please explain in the comment area.

Commenter	Yes	No	Comment	Response
TOTAL:	6	6		
Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo	X		N/A	
Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes	X			
ISO NE Cheryl Mendrala		X	This proposed standard change was not initiated due to reliability needs	On August 2-3, 2004, NERC Version 0 Standards Drafting Team and the NAESB Business Practices Subcommittee (BPS) met to develop a joint recommendation on the division of the NERC Operating Policies into NAESB Business Practice Standards and NERC Reliability Standards. The task force proposed that NERC and NAESB adopt a TLR procedure document with the “same language and format” in their respective Version 0 standards and immediately begin a joint project to develop replacement Version 1 standards distinguishing reliability requirements and business practices by the end of 2005. This was placed on hold while the organizations developed a NERC NAESB Template Procedure for Joint Standards Development and Coordination to ensure proper coordination for standards where there is no easy separation of business and reliability and the industry would benefit from using a joint effort to meet both reliability and business concerns. The approach includes joint collaboration and joint publication of the resulting standard if required. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards

¹ The appeals process is in the Reliability Standards Process Manual: <http://www.nerc.com/standards/newstandardsprocess.html>.

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

<p>Entergy Services, Transmission Ed Davis Rick Riley Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban</p>		X	<p>The interplay between the business practices and reliability practices associated with TLR is so intimate that the two should not be divided into two standards practices. It would be best for the industry that one TLR standard be developed by the two organizations.</p>	<p>without need for separate documents. The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability. The industry will benefit from using a joint effort to meet both reliability and business concerns. The approach includes joint collaboration and joint publication of the resulting standard if required. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p>
<p>Joint Interchange Scheduling Working Group Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathie Downing Jim Eckelcamp Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke</p>	X			
<p>AEP Raj Rana</p>		X	<p>We support the NERC/NAESB initiative to split the TLR document in order extract the business practice aspects. However, there is no reliability need for this proposed standard change. The reliability need in terms by managing power flow relief in a pre-defined time period in order to maintain security of the system did not change. However, this draft does not provide reliability performance specifications, such as X MW or % of relief in Y minutes. The NERC portion of this standard should specify what is needed to maintain the system security in the interconnected environment, while the NAESB portion should specify the road map as to how to do it.</p>	<p>Thank you for the support. The effort in this SAR is devoted to correctly separating the business practices. The scope will not be to modify the recently approved TLR standard. The modifications suggested would be addressed as a separate SAR.</p>
<p>Midwest Reliability Organization Alan Boesch Terry Bilke Robert Coish Dennis Florum Todd Gosnell Wayne Guttormson Jim Maenner</p>		X	<p>The MRO does not believe there is a reliability need for the proposed standard change. We would contend that the change provides confusion to a very important reliability process. In order to understand the process the standard and the business practice are necessary.</p>	<p>The SAR team agrees that this standard is very important. It is very important for this work to be done jointly so that both the reliability elements and the business elements can be addressed and modified as needed going forward. Accomplishing this separation allows both the Standards organizations to focus on improving the parts of the standard so that the resulting jointly published standard includes the best of both business and reliability requirements. The NERC</p>

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

<p>Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight The 31 Additional MRO Members</p>				<p>NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability. The industry will benefit from using a joint effort to meet both reliability and business concerns. The approach includes joint collaboration and joint publication of the resulting standard if required. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p>
<p>Public Service Commission of South Carolina Phil Riley John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton Mignon L. Clyburn C. Robert Moseley</p>	X			
<p>Ohio Valley Electric Corp. Scott R. Cunningham</p>	X			
<p>IESO, Ontario Dan Rochester</p>		X	<p>We do not feel there is a reliability need for the proposed standard "change". We would contend that the change provides confusion to a very important reliability process. In order to understand the process the standard and the business practice are necessary.</p>	<p>The SAR team agrees that this standard is very important. It is very important for this work to be done jointly so that both the reliability elements and the business elements can be addressed and modified as needed going forward. Accomplishing this separation allows both the Standards organizations to focus on improving the parts of the standard so that the resulting jointly published standard includes the best of both business and reliability requirements. The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability. The industry will benefit from using a joint effort to meet both reliability and business concerns. The approach includes joint collaboration and joint publication of the resulting standard if required. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p>
<p>Southern Company Generation Roman Carter Joel Dison</p>	X			

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

<p>Clifford Shepard Lucius Burris Steve Lowe</p>				
<p>CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha</p>		<p>X</p>	<p>This proposed standard change was not initiated due to reliability needs. NPCC Participating members believe that the change is in conflict to very important reliability rules. In order to understand the process the standard and the business practice are necessary.</p>	<p>The SAR team agrees that this standard is very important. It is very important for this work to be done jointly so that both the reliability elements and the business elements can be addressed and modified as needed going forward. Accomplishing this separation allows both the Standards organizations to focus on improving the parts of the standard so that the resulting jointly published standard includes the best of both business and reliability requirements. The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability. The industry will benefit from using a joint effort to meet both reliability and business concerns. The approach includes joint collaboration and joint publication of the resulting standard if required. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p>

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

2. Do you believe the TLR Subcommittee appropriately divided the elements of TLR business practices vs. TLR reliability requirements? If not, please explain in the comment area.

Commenter	Yes	No	Comment	Response
TOTAL:	5	7		
Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo	X		N/A	
Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes		X	We feel that the division between business practices and reliability standards may not have gone far enough. The reliability standards should focus on establishing the criteria for initiation of different TLR levels and the required timeframes for relief. Business practices should focus on how the curtailments are executed to achieve the relief levels in the timeframes required by the reliability standard.	The effort in this SAR is devoted to correctly separating the business practices. The scope will not be to modify the recently approved TLR standard. The modifications suggested would be addressed as a separate SAR.
ISO NE Cheryl Mendrala		X	- Section 2.6 and 2.7 in the original standard defined step-by-step actions the Operator is to take under TLR Levels 5a and 5b. These actions have been removed and currently reside in the proposed NAESB standard. It is not appropriate for a business practice standard to define actions to be taken by a Reliability Coordinator in real-time operations to resolve a reliability issue. The need for a TLR is in response to a problem with reliability on the system. There is no doubt that the Operator must be presented with all the information that is contained in both the proposed NERC and NAESB standards in order to issue that TLR. If the operator does not know what transactions are available in any given category, they do not know what TLR level is needed to resolve the situation. Therefore, we cannot agree with the assertion that the information contained in the NAESB standard does not impact reliability. We agree that some aspects of the original IRO-006 are 'business practices,' and agree that the completed effort generally meets the original intent of splitting the business practice and reliability components. However, seeing the resulting split, it is clear that these business practices have a direct impact on reliability and we believe they should be maintained within one single standard to prevent confusion and conflicts. Also, since the fundamental practice for defining the priorities and treatment of transactions under each TLR level is consistent with the FERC pro-forma tariff, there is minimal subjectivity involved in the business practices that are included in the original NERC standard.	The Reliability Coordinator makes a selection of what relief is needed and the tool which uses the product type to identify what is available for adjustment then makes the choice and applies the method to provide the relief requested. The TLR Task force which included members of both reliability and business agreed that these items were business practices. The TLR procedure is established to manage congestion of the grid it is designed to do so with both reliability and business elements considered. The standard will be jointly published and the operation for the industry will be the same or better than it has been using the joint standards development process. The same information or better will be provided as what is provided today. The expectation is that this standard will be jointly published so that all entities required to use the standard have one common procedure to use.
Entergy Services, Transmission Ed Davis Rick Riley		X	A complete response to this question is inappropriate at this time. It appears that IRO-006 will be divided into 3 major documents:	This has been corrected by adopting the NERC NAESB Template Procedure for Joint Standards Development and Coordination. The joint standards development process will

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

<p>Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban</p>			<p>NERC TLR reliability standards, NAESB business practices, and the IDC Reference Documentation. The answer to this question will require a detailed comparison of all three documents with respect to the existing IRO-006. We do not have the NAESB document in front of us in order to make that detailed comparison. In addition, it does not appear that a detailed comparison of the three documents has been requested since the SAR request states in the last paragraph that the development effort will begin by assessing for completeness and accuracy the revised Attachment 1.</p>	<p>require publication of all required documents for industry to comment upon. The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability. The industry will benefit from using a joint effort to meet both reliability and business concerns. The approach includes joint collaboration and joint publication of the resulting standard if required. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p>
<p>Joint Interchange Scheduling Working Group Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathee Downing Jim Eckelcamp Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke</p>	<p>X</p>			
<p>AEP Raj Rana</p>		<p>X</p>	<p>The two documents are overlapping. Same statements in both documents.</p>	<p>No response required.</p>
<p>Midwest Reliability Organization Alan Boesch Terry Bilke Robert Coish Dennis Florom Todd Gosnell Wayne Guttormson Jim Maenner Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight The 31 Additional MRO Members</p>		<p>X</p>	<p>Steps 1.4.1, 1.4.1.1, 1.5, 1.5.1, 1.6, 1.7, 2.1.2, 2.2.2, 2.4.2, 2.5.2, 3.2.1.2, 3.3.1.2, 7.1, are reliability related and should remain in the standard. The dynamic schedule part of 1.6.6 was added to the Standard in June of this year with 100% of the ballot body approval, it should remain as part of this standard.</p>	<p>A procedure includes steps that are performed to achieve expected results. It is only one method to achieve those results. If a Reliability Coordinator has options to address congestion and those options are prioritized in order of economic preference then the RC is making choices that would be appropriate under a business practice. The TLR Task force which included members of both reliability and business practice sides agreed that these items were business practices in an open process. The Reliability Coordinator makes a selection of what relief is needed and the tool which uses the product type to identify what is available for adjustment then makes the choice and applies the method to provide the relief requested.</p>
<p>Public Service Commission of South Carolina Phil Riley</p>	<p>X</p>			

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton Mignon L. Clyburn C. Robert Moseley				
Ohio Valley Electric Corp. Scott R. Cunningham	X			
IESO, Ontario Dan Rochester		X	The reliability and business practices within the TLR process are integrated to such an extent that the details need to remain contained within a single document for clarity. Concerns regarding the ability to effectively manage the model and the process with the current proposed split need to be addressed. The ability to follow developing market issues must also be retained. Steps 1.4.1, 1.4.1.1, 1.5, 1.5.1, 1.6, 1.7, 2.1.2, 2.2.2, 2.4.2, 2.5.2, 3.2.1.2, 3.3.1.2, 7.1, are reliability related and should remain in the standard. The dynamic schedule part of 1.6.6 was added to the Standard in June of this year with approval of 100% of the ballot body. It should remain as part of this standard.	A procedure includes steps that are performed to achieve expected results. It is only one method to achieve those results. If a Reliability Coordinator has options to address congestion and those options are prioritized in order of economic preference then the RC is making choices that would be appropriate under a business practice. The TLR Task force which included members of both reliability and business agreed in an open process that these items were business practices.
Southern Company Generation Roman Carter Joel Dison Clifford Shepard Lucius Burris Steve Lowe	X			
CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha		X	- Section 2.6 and 2.7 in the original standard defined step-by-step actions the Operator is to take under TLR Levels 5a and 5b. These actions have been removed and currently reside in the proposed NAESB standard. It is not appropriate for a business practice standard to define actions to be taken by a Reliability Coordinator in real-time operations to resolve a reliability issue. The need for a TLR is in response to a problem with reliability on the system. The Operator must be presented with all the information that is contained in both the proposed NERC and NAESB standards in order to issue that TLR. If the operator does not know what transactions are available in any given category, they do not know what TLR level is needed to resolve the situation. NPCC participating members do not agree with the assertion that the information contained in the NAESB standard does not impact reliability. Some aspects of the original IRO-006 are 'business practices,' and that the completed effort generally meets the original intent of splitting the business practice and reliability components. However, seeing the resulting split, it is clear that these business practices have a direct impact on reliability and they should be maintained within one single standard to prevent confusion and conflicts. Also, since the fundamental practice for defining the	The Reliability Coordinator makes a selection of what relief is needed and the tool which uses the product type to identify what is available for adjustment then makes the choice and applies the method to provide the relief requested. The TLR Task force which included members of both reliability and business agreed in an open process that these items were business practices. The TLR procedure is established to manage congestion of the grid it is designed to do so with both reliability and business elements considered. The standard will be jointly published and the operation for the industry will be the same or better than it has been using the joint standards development process. The same information or better will be provided as what is provided today. The expectation is that this standard will be jointly published so that all entities required to use the standard have one common procedure to use.

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

		<p>priorities and treatment of transactions under each TLR level is consistent with the FERC pro-forma tariff, there is minimal subjectivity involved in the business practices that are included in the original NERC standard.</p> <p>Steps 1.4.1, 1.4.1.1, 1.5, 1.5.1, 1.6, 1.7, 2.1.2, 2.2.2, 2.4.2, 2.5.2, 3.2.1.2, 3.3.1.2, 7.1, are reliability related and should remain in the standard. The dynamic schedule part of 1.6.6 was added to the Standard in June of this year with 100% of the ballot body approval, it should remain as part of this standard.</p>	
--	--	---	--

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

3. Do you believe there are still elements of TLR business practices that remain in the proposed TLR reliability requirements? If not, please explain in the comment area.

Commenter	Yes	No	Comment	Response
TOTAL:	4	8		
Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo		X	N/A	
Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes	X		Everything in the proposed Attachment 1 - IRO-006-0 from Section 3 to the end of Attachment 1, including Appendices A and B, should be removed from the reliability standard and incorporated into the TLR Business Practices document. This material gets into the internal workings of the tool itself rather than dealing with the overall guiding principle of providing, and maintaining, relief within a specific timeframe.	The effort in this SAR is devoted to correctly separating the business practices. The scope will not be to modify the recently approved TLR standard. The modifications suggested would be addressed as a separate SAR. The Attachment 1 steps of the procedure have been identified by the TLR Taskforce as having both Reliability and business practices within them. As the resulting standard will be published jointly all items are expected to be retained and the distinction of the items as reliability or as business practices will be identified.
ISO NE Cheryl Mendrala		X	See response to question 2.	See answer to questions to comment.
Entergy Services, Transmission Ed Davis Rick Riley Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban	X		The NERC TLR reliability standard part of this documentation appears to be all reliability related. However, the IDC Reference Document appears to have significant business practice elements contained in it.	The effort in this SAR is devoted to correctly separating the business practices. The scope will not be to modify the recently approved TLR standard. The modifications suggested would be addressed as a separate SAR. The Attachment 1 steps of the procedure have been identified by the TLR Taskforce as having both Reliability and business practices within them. As the resulting standard will be published jointly all items are expected to be retained and the distinction of the items as reliability or as business practices will be identified.
Joint Interchange Scheduling Working Group Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathee Downing Jim Eckelcamp Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke		X		
AEP Raj Rana	X		We believe that items like firm/non-firm transactions types, TLR levels etc. should be taken out of the reliability portion of this standard. These items should be included in the NAESB portion.	The Attachment 1 steps of the procedure have been identified by the TLR Taskforce as having both Reliability and business practices within them. As the resulting standard will be

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

			The reliability portion should only address the needed relief amount on constrained facilities and the time under which the relief should be provided in order to maintain security of the interconnected network.	published jointly all items are expected to be retained and the distinction of the items as reliability or as business practices will be identified.
Midwest Reliability Organization Alan Boesch Terry Bilke Robert Coish Dennis Florom Todd Gosnell Wayne Guttormson Jim Maenner Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight The 31 Additional MRO Members		X		
Public Service Commission of South Carolina Phil Riley John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton Mignon L. Clyburn C. Robert Moseley		X		
Ohio Valley Electric Corp. Scott R. Cunningham	X		At times, RTO ramp limitations are invoked when TLR curtailments occur. This issue is not covered in the standard, but seems to be related to a business practice, rather than a reliability issue. Perhaps the ramp limitation should be waived or adjusted if the limitation is caused by the curtailments that occur with the TLR.	The effort in this SAR is devoted to correctly separating the business practices. The scope will not be to modify the recently approved TLR standard. The modifications suggested would be addressed as a separate SAR.
IESO, Ontario Dan Rochester		X		
Southern Company Generation Roman Carter Joel Dison Clifford Shepard Lucius Burris Steve Lowe		X		
CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha		X	See response to question 2.	See answer to questions to comment.

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

4. Do you believe there are still elements of TLR reliability requirements that remain in the proposed TLR business practices? If not, please explain in the comment area.

Commenter	Yes	No	Comment	Response
TOTAL:	4	7		
Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo		X	N/A	
Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes	X		Sections 3.2.1, 3.2.1.1 and 3.2.1.2 should be moved to the reliability standard since they deal more with how and why a Level 2 TLR is initiated than with the internal workings of the IDC.	The TLR Task force which included members of both reliability and business agreed that these items were business practices. This could be modified through the joint NERC / NAESB development process, which would determine whether a new SAR is needed.
ISO NE Cheryl Mendrala	X		See response to question 2.	See answer to questions to comment.
Entergy Services, Transmission Ed Davis Rick Riley Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban		X	We can not answer this question since we do not have the NAESB proposal TLR business practices in this package.	This is beyond the scope of this drafting team's assigned task. This should be addressed through a BP request to NAESB or through a SAR to NERC.
Joint Interchange Scheduling Working Group Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathee Downing Jim Eckelcamp Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke		X		
AEP Raj Rana			No comments. The TLR business practices document is not available.	
Midwest Reliability Organization	X		See comments in question 2.	See answer to questions to comment.

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

Alan Boesch Terry Bilke Robert Coish Dennis Florom Todd Gosnell Wayne Guttormson Jim Maenner Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight The 31 Additional MRO Members				
Public Service Commission of South Carolina Phil Riley John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton Mignon L. Clyburn C. Robert Moseley		X		
Ohio Valley Electric Corp. Scott R. Cunningham		X		
IESO, Ontario Dan Rochester		X	See comments in question 2.	See answer to questions to comment.
Southern Company Generation Roman Carter Joel Dison Clifford Shepard Lucius Burris Steve Lowe		X		
CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha	X		See response to question 2.	See answer to questions to comment.

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

5. Do you have any other comments on these proposed changes?

Commenter	Yes	No	Comment	Response
Southern Company – Transmission Jim Busbin Marc Butts Jim Viikinsalo	X		My only concern with the splitting of reliability requirements and business practices is how they will be managed and/or coordinated in the future. I'm not sure what value is added to the reliability of the grid by now having our grid operators manage their respective systems with a NERC manual in one hand and a NAESB manual in the other. Right now the two documents are in synch with one another; however, as we move forward in time, what will be the process for conflict resolution between the two?	The effort in this SAR is devoted to correctly separating the business practices. The scope will not be to modify the recently approved TLR standard. The business practices will be filed by the NAESB organization and the reliability items will be filed by the NERC organization. The two will be jointly published so that all entities responsible for complying with the procedure have both parts in one document. The Attachment 1 steps of the procedure have been identified by the TLR Taskforce as having both Reliability and business practices within them. As the resulting standard will be published jointly all items are expected to be retained and the distinction of the items as reliability or as business practices will be identified.
Operating Reliability Working Group (ORWG) Robert Rhodes Dan Boezio Bob Cochran Mike Crouch Todd Fridley Mike Gammon Serhly Kotsan Robert Rhodes	X		Section 1.5.1 of Attachment 1 refers to treatment of Interchange Transactions not in the IDC in accordance with NAESB business practices, but we could not find any reference to this treatment in the TLR business practices.	
ISO NE Cheryl Mendrala	X		<p>Recommend restoring the reference to RCIS tool in 1.4. That reference was eliminated when the old 1.4.1 was removed.</p> <ul style="list-style-type: none"> - The old 1.5.1 was removed. There's a general statement added to 1.2 that says "In addition, a Reliability Coordinator may implement other NERC-approved procedures to request relief to mitigate any other transmission constraints as necessary to preserve the reliability of the system." But, that phrase does not seem to capture the same intent as the previous 1.5.1 wording. - Section 1.5.3 the numbering on this section is very confusing. Suggest the following: <ul style="list-style-type: none"> 1.5.3.1. Causes of questionable IDC results may include: (1) Missing Interchange transactions that are known to contribute to the Constraint, (2) Significant change in transmission system topology, or (3) TDF matrix error. 1.5.3.2 Impacts of questionable IDC results may include: (1) relief that would have no effect on, or aggravate the constraint or (2) that would initiate a constraint elsewhere. 1.5.3.3. If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the relief request list are made. - Title of Section 2 should be changed to be only "Transmission Loading Relief (TLR) Levels." 	<p>Going forward the changes will be managed from the joint standards development process and there is no anticipated change in the funding or contract agreements to modify the software. The team will review the changes to the standard since version 0 split was determined and make incremental changes as appropriate.</p> <p>The reference was moved to NAESB BP 1.4 and changed to refer to generic tool instead of RCIS specifically. The standard will determine the best way to format and number the steps in the procedure jointly.</p>

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

		<ul style="list-style-type: none"> - Section 3 is missing section 3.1. - Suggest that Section 3.2 include a reference to the fact that transactions submitted after the XX:25 deadline will put on HOLD. - Are Section 3.3.3 and Section 3.4.3 referring back to the deadline defined in 3.2? If so, that section should be referenced. - Text in 3.3.1.1 and 3.3.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.3.1.1 text be changed to “At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour”. - Text in 3.4.1.1 and 3.4.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.4.1.1 text be changed to “At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour”. - The section notation of Appendix B should be modified. The Section numbering shown in the index is not how the headings are titled in the Sections. Also, Section F and Section G should not be 5.1 and 5.2; they should be at the highest index level. <p>General Comment: There have been changes to the congestion management process over the last few years that involve the use of Market information by the IDC. Any new standards addressing the TLR process and the IDC, whether in NERC or NAESB, should consider addressing the current information available to the IDC and include some mention of that information in that standard development.</p> <p>General Comment: One other practical concern that has not been addressed is the ownership, impact and funding of the IDC tool that automates the ‘business practices’ of implementing a TLR for the Operator. The split of the original NERC IRO-006 should not be adopted until this issue is addressed and resolved.</p>	
<p>Entergy Services, Transmission Ed Davis Rick Riley Jay Zimmerman George Bartlett James Case Bill Aycock Melinda Montgomery Narinder Saini Maurice Casadaban</p>	<p>X</p>	<p>The SAR contains the statement that the urgent action revision to Attachment 1 addressing dynamic schedules will be incorporated into the NAESB business practices. We suggest starting with IRO-006-1, rather than with IRO-006-0. Please delete all references to IRO-006-0 (and IRO-006-1) in headers, footers, titles, etc. This new document will result in a new version of IRO--006. This current draft is not version 0 or 1. Please delete all references to adoption by the NERC Board of Trustees, Effective Date, and all dates because the document we are viewing has not been adopted by the BOT and does not have an Effective Date. Please provide a redline version showing the draft changes to IRO-006-1. This redline would make review and comment much easier for commenters.</p> <p>We appreciate the development of the matrix and would</p>	<p>We agree and feel all changes have been made but will review for any additional changes required.</p>

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

			probably find it useful for keeping track of the disposition of each requirement in the original IRO-006. However, in its current form we do not understand which columns relate to which documents and the row designations are not clearly understood.	
<p>Joint Interchange Scheduling Working Group</p> <p>Bert Gumm Troy Simpson Marilyn Franz Jim Hansen Kathee Downing Jim Eckelcamp Bob Harshbarger Paul Sorenson Bob Schwermann Bonita Smulski Taryn McPherson Salah Kitali Joel Mickey Andrew Burke</p>	X		<p>1. We request that the scope of this SAR be expanded to include resolving the reloading of curtailed transactions above their reliability limit by an entity other than the initiating entity or above any pre-existing reliability or market profiles. 2. We also request that the scope of the SAR be expanded to include standards for when curtailments may be denied and when curtailments may be issued. 1 - There have been several instances where a curtailment has been issued and then been automatically or manually reloaded above the reliability limit. The automatic reload problem created by the IDC has been resolved by CO-148, automatic reload by other back office applications has not been corrected, nor have manual adjustments. There are several options available for correcting this problem. This should be addressed by specifying requirements and performance measures in the TLR standard and may also be addressed through NAESB business practices and modifications to the e-Tag specification. Also, any pre-existing curtailment levels are lost. JISWG recommends that the entity who has issued the curtailment be the only entity able to authorize the reload. When the reload occurs the energy profile should be limited to the next lowest reliability limit or market adjustment profile. 2- Under normal circumstances, a curtailment (issued for reliability reasons) should not be denied. However, there are some limited circumstances where a curtailment should be denied. For example, if a curtailment comes in and the generator cannot meet the ramp requirements, then the curtailment could be denied and would be reissued for the next scheduling interval. This ensures that the tags reflect actual conditions. In other cases, curtailments are sometimes issued when PSE's cannot make their market level adjustments prior to cutoff. The TLR standard should address those specific reasons for denying a curtailment. Reliability is compromised when curtailments are denied for non-reliability reasons. Reliability may also be compromised when curtailments are issued for non-reliability reasons. If scope of the SAR is adjusted, JISWG volunteers to assist the drafting team with providing specific language for the TLR standard addressing these issues.</p>	<p>This is beyond the scope of this drafting team's assigned task. This should be addressed through a BP request to NAESB or through a SAR to NERC.</p>
<p>AEP Raj Rana</p>	X		<p>Use of proxy flowgates by the reliability coordinators must be prohibited. This practice must be explicitly addressed in this standard because, the use of proxy flowgates not only will result in mis-allocation of corrective actions, but at worst could even result in actions being taken that actually increase flows on the limiting element, instead of decreasing them.</p>	<p>This is beyond the scope of this drafting team's assigned task. This should be addressed through a BP request to NAESB or through a SAR to NERC. (See NERC ORS task force activities on this topic)</p>
<p>Midwest Reliability Organization</p>	X		<p>It was very difficult to review the changes to the standard</p>	<p>This has been corrected by adopting the NERC NAESB</p>

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

<p>Alan Boesch Terry Bilke Robert Coish Dennis Florom Todd Gosnell Wayne Guttormson Jim Maenner Tom Mielnik Darrick Moe Ken Goldsmith Joe Knight The 31 Additional MRO Members</p>			<p>without a redline copy. In order to perform our review we made a redline of the original standard. The MRO does not support this modification. The proposed change provides confusion to a very important reliability process. Also the proposed standard references a NAESB standard which is inconsistent with the NERC Standards Process Manual which says "All mandatory requirements of a reliability standard shall be within an element of the standard. Supporting documents to aid in the implementation of a standard may be referenced by the standard but are not part of the standard itself." There are mandatory parts of the proposed standard in the NAESB business practice and are necessary for the successful implementation of this reliability standard. With the two documents being modified by separate entities there is a good chance that the documents will not be coordinated and kept in synchronization when changes are made.</p>	<p>Template Procedure for Joint Standards Development and Coordination. The joint standards development process will require publication of all required documents for industry to comment upon. There will be one jointly published document which covers both the standards and the joint standards development process will address the synchronization issues mentioned. The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability. The industry will benefit from using a joint effort to meet both reliability and business concerns. The approach includes joint collaboration and joint publication of the resulting standard if required. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p>
<p>Public Service Commission of South Carolina Phil Riley John E. Howard David A. Wright Randy Mitchell Elizabeth B. Fleming G. O'Neal Hamilton Mignon L. Clyburn C. Robert Moseley</p>		X		
<p>Ohio Valley Electric Corp. Scott R. Cunningham</p>	X		<p>The use of proxy flowgates is not mentioned at all in the proposed standard. The use of proxy flowgates should not be allowed, except in very unusual circumstances. If use of a proxy flowgate is necessary, such use should be justified and approval from all affected parties should be obtained.</p>	<p>This is beyond the scope of this drafting team's assigned task. This should be addressed through a BP request to NAESB or through a SAR to NERC. (See NERC ORS task force activities on this topic)</p>
<p>IESO, Ontario Dan Rochester</p>	X		<p>The IESO does not fully support the modifications proposed in this SAR. The proposed change provides confusion to a very important reliability process. Also the proposed standard references a NAESB standard which is inconsistent with the NERC Standards Process Manual which says "All mandatory requirements of a reliability standard shall be within an element of the standard. Supporting documents to aid in the implementation of a standard may be referenced by the standard but are not part of the standard itself." There are mandatory parts of the proposed standard in the NAESB business practice that are necessary for the successful implementation of this reliability standard. With the two documents being modified by separate entities there is a good chance that the documents will not be coordinated and kept in synchronization when changes</p>	<p>This has been corrected by adopting the NERC NAESB Template Procedure for Joint Standards Development and Coordination. The joint standards development process will require publication of all required documents for industry to comment upon. There will be one jointly published document which covers both the standards and the joint standards development process will address the synchronization issues mentioned. The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability. The industry will benefit from using a joint effort to meet both reliability and business concerns. The approach includes joint collaboration and joint publication of the resulting standard if required. The</p>

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

		<p>are made. As acknowledged by the TLR Subcommittee that worked to create this proposed split, the business practices and reliability aspects of TLR are very intertwined. In effect, the information in both the proposed NERC and NAESB standard must be simultaneously available to the Operators in the Control Room, in order for them to operate the system reliably. While the effort to create this initial split in the TLR standards has been completed, consideration should be given as to how this split will be maintained, if going forward, before it is adopted by the industry. Operator training issues, as well as the ownership and funding of the IDC tool should be considered in this evaluation before such a significant step is taken on a standard that is fundamental to the reliability of the Eastern Interconnection. This is an important process that requires a complete understanding of the impact of separating the business practice from the reliability concepts. It is not clear that the current proposed document split will retain the integrity of the TLR process. The potential negative impact of degrading the RC's ability to manage loop flow dictates that any change in documentation and responsibility must proceed carefully.</p>	<p>joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p> <p>The IDC is the tool that specifies how the Business Practice and the Reliability adjustments are made. The RC specifies how much relief is required and the tool combines the logic based on business practice rules to identify how much relief in each transaction should be distributed. NERC will work jointly to provide training when needed by using the committees and then by providing the necessary materials so the industry can train their staff on</p>
<p>Southern Company Generation Roman Carter Joel Dison Clifford Shepard Lucius Burris Steve Lowe</p>	X	<p>As NAESB and NERC standards are approved and implemented which require close coordination between the two organizations, the need for a common "Operations Manual" may become necessary for System Operators.</p>	<p>The effort in this SAR is devoted to correctly separating the business practices. The scope will not be to modify the recently approved TLR standard. The business practices will be filed by the NAESB organization and the reliability items will be filed by the NERC organization. The two will be jointly published so that all entities responsible for complying with the procedure have both parts in one document. The Attachment 1 steps of the procedure have been identified by the TLR Taskforce as having both Reliability and business practices within them. As the resulting standard will be published jointly all items are expected to be retained and the distinction of the items as reliability or as business practices will be identified.</p>
<p>CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman Khaqan Khan Vinod (Bob) Kotecha</p>	X	<p>This is an important process that requires a complete understanding of the impact of separating the business practice from the reliability concepts. It is not clear that the current proposed document split will retain the integrity of the TLR process. The potential negative impact of degrading the RC's ability to manage loop flow dictates that any change in documentation and responsibility must proceed carefully. NPCC participating Members believe the proposed change provides confusion to a very important reliability process. There are mandatory parts of the proposed standard in the NAESB business practice that are necessary for the successful implementation of this reliability standard. With the two documents being modified by separate entities there is a good chance that the documents will not be coordinated and kept in synchronization when changes are made.</p> <p>Recommend restoring the reference to RCIS tool in 1.4. That</p>	<p>The NERC NAESB Template Procedure for Joint Standards Development and Coordination was developed to ensure proper coordination for standards where there is no easy separation of business and reliability. The industry will benefit from using a joint effort to meet both reliability and business concerns. The approach includes joint collaboration and joint publication of the resulting standard if required. The joint collaboration ensures during development issues can be addressed jointly so that the resulting business practice and reliability standards work together. Using this process the result is that the jointly published standard includes the business practices and the reliability standards without need for separate documents.</p> <p>Going forward the changes will be managed from the joint standards development process and there is no anticipated</p>

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

		<p>reference was eliminated when the old 1.4.1 was removed.</p> <ul style="list-style-type: none"> - The old 1.5.1 was removed. There's a general statement added to 1.2 that says "In addition, a Reliability Coordinator may implement other NERC-approved procedures to request relief to mitigate any other transmission constraints as necessary to preserve the reliability of the system." But, that phrase does not seem to capture the same intent as the previous 1.5.1 wording. - Section 1.5.3 the numbering on this section is very confusing. Suggest the following: <ul style="list-style-type: none"> 1.5.3.1. Causes of questionable IDC results may include: (1) Missing Interchange transactions that are known to contribute to the Constraint, (2) Significant change in transmission system topology, or (3) TDF matrix error. 1.5.3.2 Impacts of questionable IDC results may include: (1) relief that would have no effect on, or aggravate the constraint or (2) that would initiate a constraint elsewhere. 1.5.3.3. If other Reliability Coordinators are involved in the TLR event, all impacted Reliability Coordinators shall be in agreement before any adjustments to the relief request list are made. - Title of Section 2 should be changed to be only "Transmission Loading Relief (TLR) Levels." - Section 3 is missing section 3.1. - Suggest that Section 3.2 include a reference to the fact that transactions submitted after the XX:25 deadline will put on HOLD. - Are Section 3.3.3 and Section 3.4.3 referring back to the deadline defined in 3.2? If so, that section should be referenced. - Text in 3.3.1.1 and 3.3.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.3.1.1 text be changed to "At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour". - Text in 3.4.1.1 and 3.4.2 are referring to the same process for reallocation and should use the same terminology. Suggest 3.4.1.1 text be changed to "At XX:25 a reallocation will be performed for the following hour to maintain the target flow identified for the current hour". - The section notation of Appendix B should be modified. The Section numbering shown in the index is not how the headings are titled in the Sections. Also, Section F and Section G should not be 5.1 and 5.2; they should be at the highest index level. <p>General Comment: There have been changes to the congestion management process over the last few years that involve the use of Market information by the IDC. Any new standards addressing the TLR process and the IDC, whether in NERC or NAESB, should consider addressing the current information</p>	<p>change in the funding or contract agreements to modify the software. The team will review the changes to the standard since version 0 split was determined and make incremental changes as appropriate.</p> <p>The reference was moved to NAESB BP 1.4 and changed to refer to generic tool instead of RCIS specifically. The standard will determine the best way to format and number the steps in the procedure jointly.</p>
--	--	--	--

Comments — Draft 1 Proposed Reliability Coordination — Transmission Loading Relief IRO-006-1 SAR

		<p>available to the IDC and include some mention of that information in that standard development. In addition, Operator training issues, as well as the ownership and funding of the IDC tool should be considered in this evaluation before such a significant step is taken on a standard that is fundamental to the reliability of the Eastern Interconnection.</p> <p>General Comment: One other practical concern that has not been addressed is the ownership, impact and funding of the IDC tool that automates the 'business practices' of implementing a TLR for the Operator. The split of the original NERC IRO-006 should not be adopted until this issue is addressed and resolved.</p>	
--	--	---	--

PLEASE NOTE: items designated for inclusion in the NAESB TLR business practice following completion of the standard revision are highlighted in gray.

Attachment 1-IRO-006

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. *(Section 2.1 of NAESB Transmission Loading Relief Business Practice)*
- 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. *(This paragraph is in both NERC and NAESB standards)*

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. *(Sections 1.1, 1.2, 1.2.11 of NAESB Transmission Loading Relief Business Practice)*

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. *(Section 1.3 of NAESB Transmission Loading Relief Business Practice)*

1.6.6. Reallocation. The Reliability Coordinator shall consider for Reallocation any Transactions of higher priority that meet the approved tag submission deadline during a TLR Level 3A. The Reliability Coordinator shall consider for Reallocation any Transaction using Firm Transmission Service that has met the approved tag submission deadline during a TLR Level 5A. Note Reallocations for Dynamic Schedules are as follows: If an Interchange Transaction is identified as a Dynamic Schedule and the transmission service is considered firm according to the constrained path method, then it will not be held by the IDC during TLR level 4 or lower. Adjustments to Dynamic Schedules in accordance with INT-004 R5 will not be held under TLR level 4 or lower. *(Sections 3.3, 3.3.1, 3.3.1.2, 3.6, and for Dynamic Schedules for levels 4 and lower Sections 3.2.5, 3.3.1.2, 3.4.1.2, and 3.5.2.1 of NAESB Transmission Loading Relief Business Practice)*

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."

 NERC TLR reference document]

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. (*Sections 3.2.2, 3.2.3, and 3.2.4 of NAESB Transmission Loading Relief Business Practice*)

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. **(Sections 3.21, 3.2.1.1, and 3.2.1.2 of NAESB Transmission Loading Relief Business Practice)**

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.” **(Sections 3.3 – 3.3.1.2 of NAESB Transmission Loading Relief Business Practice)**

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. **(Sections 3.3.2 and 3.3.2.3 of NAESB Transmission Loading Relief Business Practice)**

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. **(Sections 3.3.2.4 of NAESB Transmission Loading Relief Business Practice)**

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. **(Sections 3.3.2.5 of NAESB Transmission Loading Relief Business Practice)**

2.3.2.4. The Reliability Coordinator shall reload curtailed Interchange Transactions prior to allowing the start of new or increased Interchange Transactions. (*Sections 3.3.2.6 of NAESB Transmission Loading Relief Business Practice*)

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. (*Sections 3.3.2.6.1 of NAESB Transmission Loading Relief Business Practice*)

2.3.2.5. The Reliability Coordinator shall fill available transmission capability by reloading or starting eligible Transactions on a pro-rata basis. (*Sections 3.3.3.1 of NAESB Transmission Loading Relief Business Practice*)

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. (*Sections 3.3.2.1 and 3.3.2.1.1 of NAESB Transmission Loading Relief Business Practice*)

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

2.4.2. **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” in the current hour to mitigate an SOL or IROL as well as reallocating, in accordance with Section 6 of this document, to a determined flow for the top of the next hour.

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 Level 3b.” (*Sections 3.4.2 and 3.4.1 of NAESB Transmission Loading Relief Business Practice*)

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 reliability 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. (*Sections 3.5 and 3.5.2 of NAESB Transmission Loading Relief Business Practice*)

2.5.3. **Reconfiguration procedures.** The issuance of a TLR Level 4 shall result in the curtailment, in the current hour and the next hour, of all Interchange Transactions using Non-firm Point-to-Point Transmission Service that are at or above the Curtailment Threshold that impact the Constrained Facilities. If a SOL or IROL violation is imminent or occurring, the Reliability Coordinator(s) shall request that the affected Transmission Operators reconfigure transmission on their system, or arrange for reconfiguration on other transmission systems, to mitigate the constraint. Specific details are explained in 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: (*Section 3.6.2 of NAESB Transmission Loading Relief Business Practice*)

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

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

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. *(Sections 3.6.2.3, 2.6.2.3.1, and 3.6.2.3.2 of NAESB Transmission Loading Relief Business Practice)*

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: *(Sections 3.7 and 3.7.1 of NAESB Transmission Loading Relief Business Practice)*

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. *(Sections 3.7.1.1 and 3.7.1.1.1 of NAESB Transmission Loading Relief Business Practice)*

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." *(Sections 3.7.1.2 of NAESB Transmission Loading Relief Business Practice)*

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

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 el 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 (*Section 2.1 of NAESB Transmission Loading Relief Business Practice*)

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. (*Section 2.2.1 of NAESB Transmission Loading Relief Business Practice*)

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 (*Section 3.3 of NAESB Transmission Loading Relief Business Practice*)

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 (*Sections 2.2 of NAESB Transmission Loading Relief Business Practice*)

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. (*Section 2.2.1.1 of NAESB Transmission Loading Relief Business Practice*)

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

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. (*Section 2.2.1.2 of NAESB Transmission Loading Relief Business Practice*)

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

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

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. *(Section 2.3.1.1 of NAESB Transmission Loading Relief Business Practice)*

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

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. *(Section 2.3.1.2 of NAESB Transmission Loading Relief Business Practice)*

Discussion. If the entire Contract Path is Firm Point-to-Point Transmission Service, then the TLR procedure will treat the Interchange Transaction as firm, even for Constraints off the Contract Path, and will not curtail that Interchange Transaction until all non-firm Interchange Transactions that are at or above the Curtailment Threshold have been curtailed. However, Transmission Providers off the Contract Path are not obligated to reconfigure their transmission system or provide other congestion management procedures unless special arrangements are in place. Because the Interchange Transaction is considered firm everywhere, the Reliability Coordinator may attempt to arrange for Transmission Operators to reconfigure transmission or provide other congestion management options or Balancing Authorities to 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. *(Section 3.11 of NAESB Transmission Loading Relief Business Practice)*
- 5.1.2.** For Firm Point-to-Point Transmission Services, the Transfer Distribution Factors must be greater than or equal to the Curtailment Threshold. *(Sections 3.11.1 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice)*
- 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. *(Sections 3.11 and 3.11.1.1 of NAESB Transmission Loading Relief Business Practice)*
- 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. *(Sections 3.11.2.1, 3.11.2.1.1, 3.11.2.1.2, 3.11.2.1.3 and 3.11.2.1.4 of NAESB Transmission Loading Relief Business Practice)*
- 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. *(Section 3.11.2.8 of NAESB Transmission Loading Relief Business Practice)*

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

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. *(all Sections 3.11.2.2 of NAESB Transmission Loading Relief Business Practice)*

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.

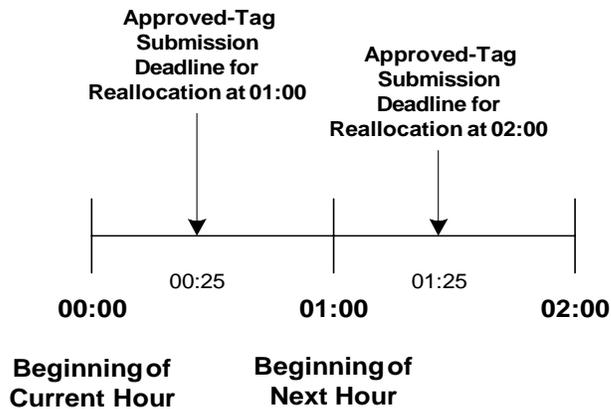


Figure 1 - Timeline showing Approved-tag Submission Deadline for Reallocation

- 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.

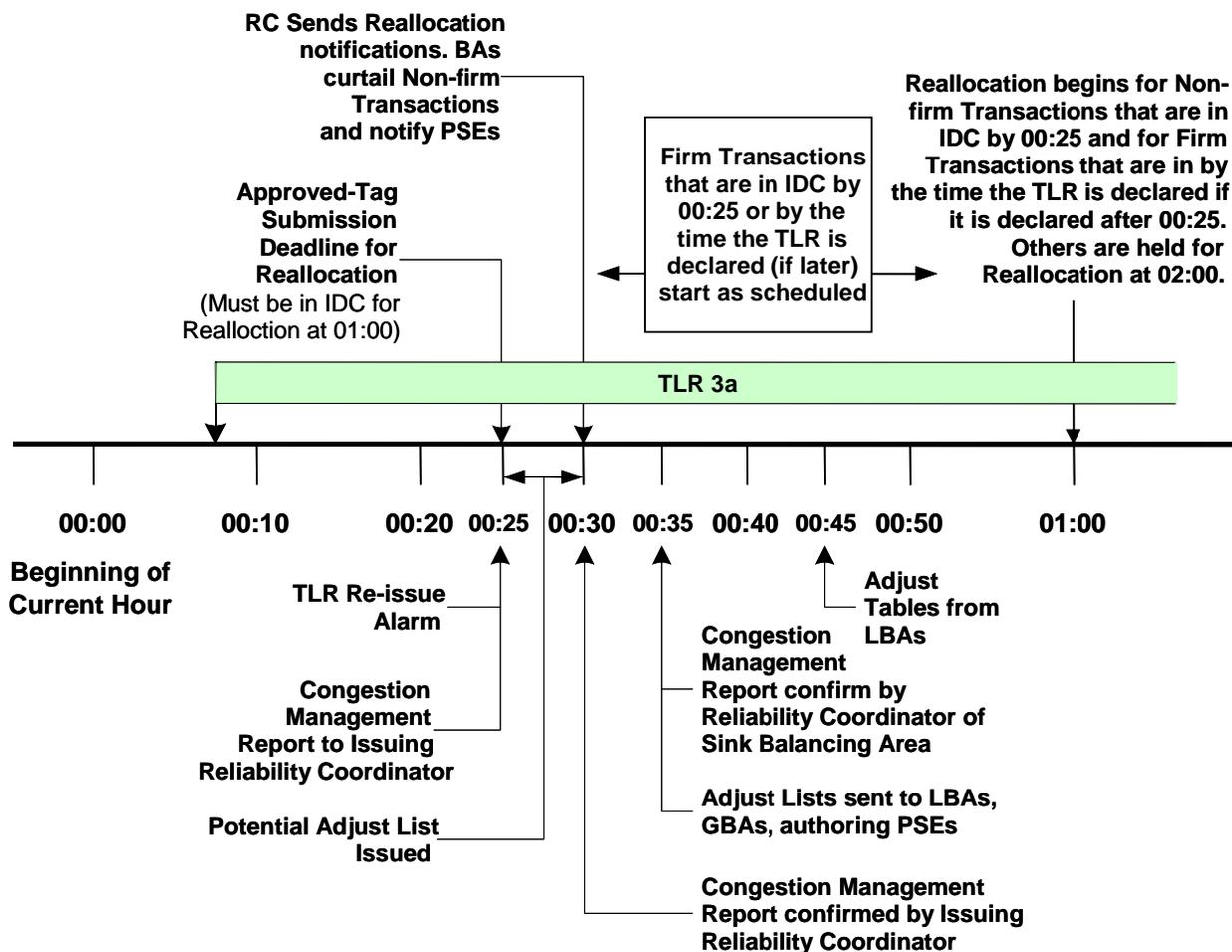


Figure 2 — Reallocation Timing for TLR 3a Called at 00:08

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).

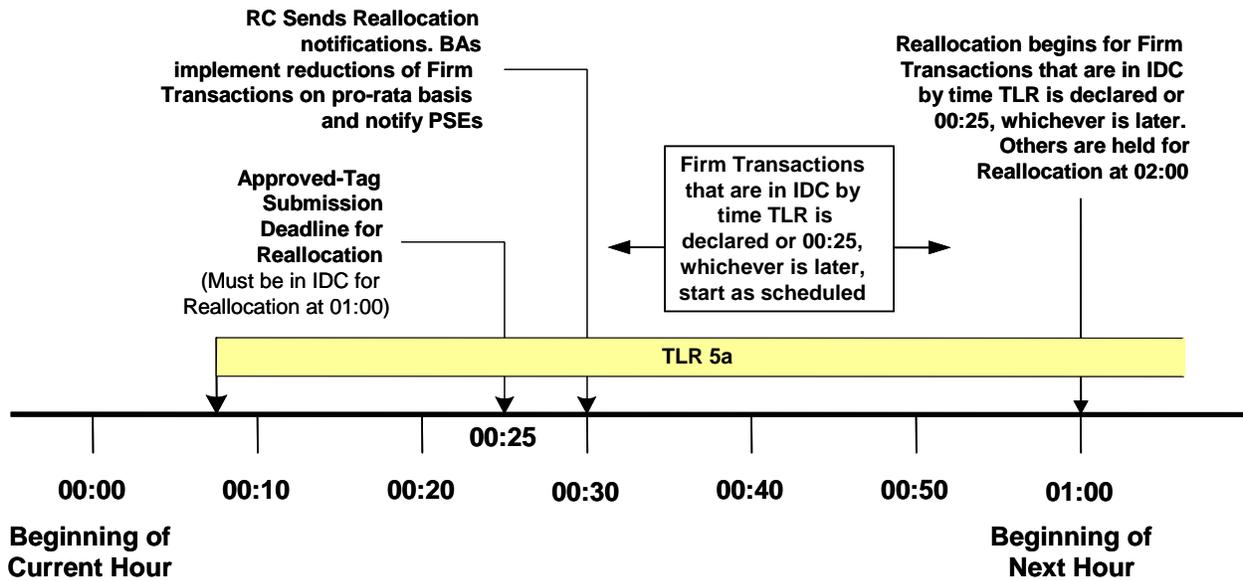


Figure 3 — Reallocation timing for TLR 5a called at 00:08.

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.

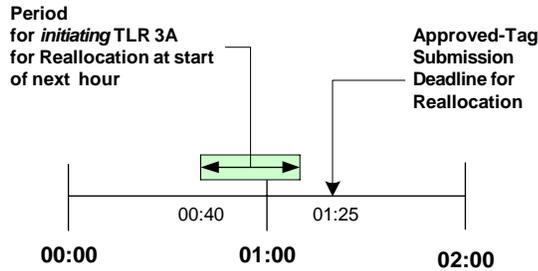


Figure 4. "Ideal" time for issuing TLR 3a for Reallocation at 02:00.

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 in the current hour while Reallocating to a determined flow for the top of the next hour (See **Requirement 2.4, "TLR Level 3b."**).

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 or holding.
- 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 for the current hour.
- 7.4. The Reliability Coordinator shall Reallocate Interchange Transactions using Non-firm Point-to-Point Transmission Service in accordance with Section 6 of this document for the next hour to maintain the desired flow using Reallocation in accordance with the following timing specification:
 - 7.4.1. Issued prior to XX: 25, Non-firm Interchange Transactions will be curtailed to meet the desired current hour relief
 - 7.4.1.1. At XX: 25 a Reallocation will be performed to maintain the desired flow at the top of the following hour
 - 7.4.2. If issued after XX: 25, Non firm Interchange Transactions will be curtailed to meet the desired current hour relief and a Reallocation will be performed to maintain the target flow identified for the current hour.
 - 7.4.3. Transactions must be in the IDC by the Approved-tag Submission Deadline for Reallocation (see Requirement 6.2).

- 7.5.** 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.”
- 7.6.** 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.
- 7.7.** 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:
 - 7.7.1.** Interchange Transactions using Non-firm Point-to-Point Transmission Service that are to be curtailed or held during current and next hours.
 - 7.7.2.** Interchange Transactions using Firm Point-to-Point Transmission Service that were entered after XX:25 or issuance of TLR 3b (see Case 3 in Appendix F).
- 7.8.** 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.
- 7.9.** The Reliability Coordinator will no longer be required to call a TLR Level 3a as soon as the SOL or IROL violation that caused the TLR 3b to be called has been mitigated due to the inherent next hour Reallocation that takes place for the top of the next hour in the TLR Level 3b.

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.

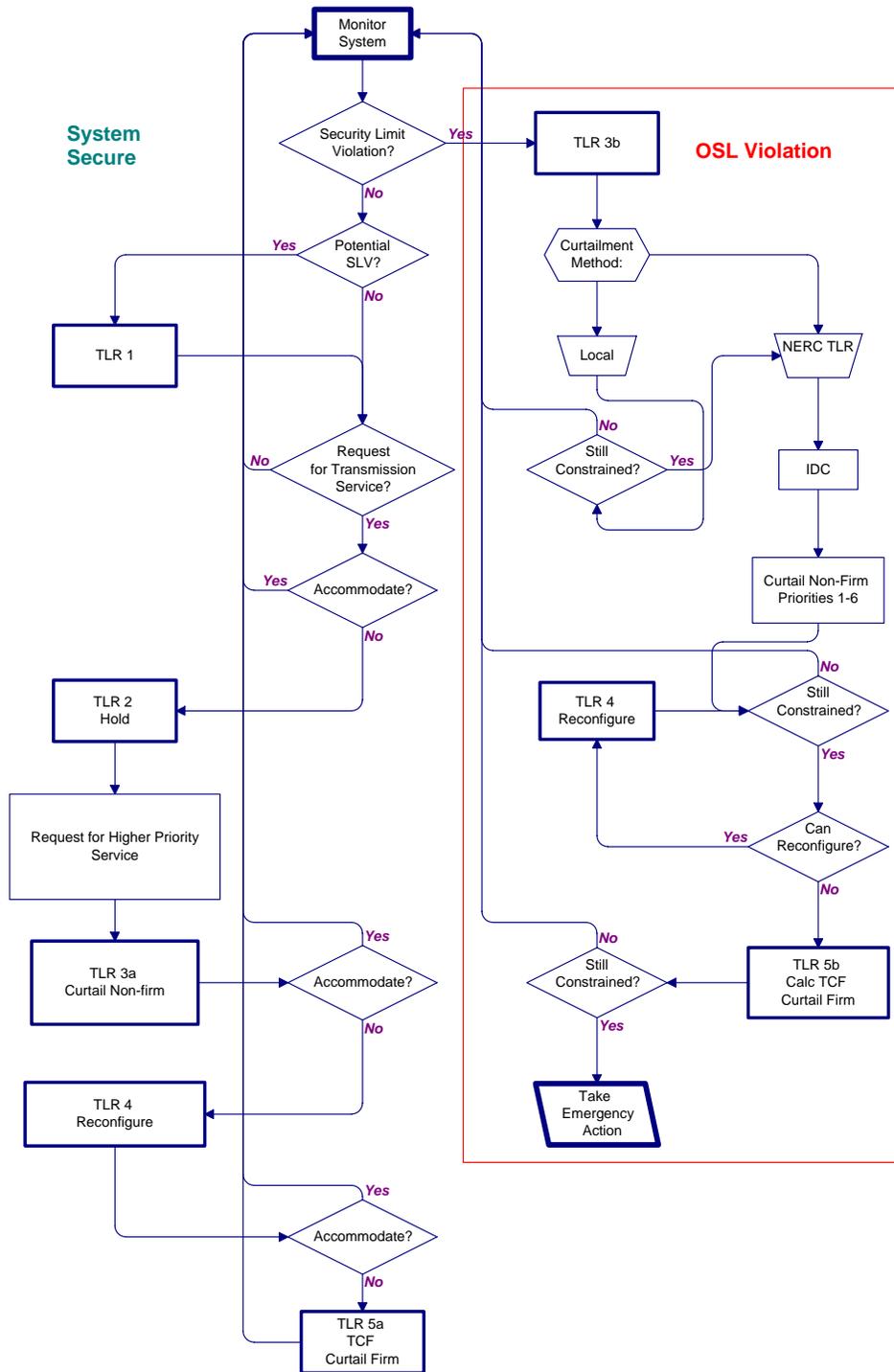
Section E2: Timing Requirements.

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.



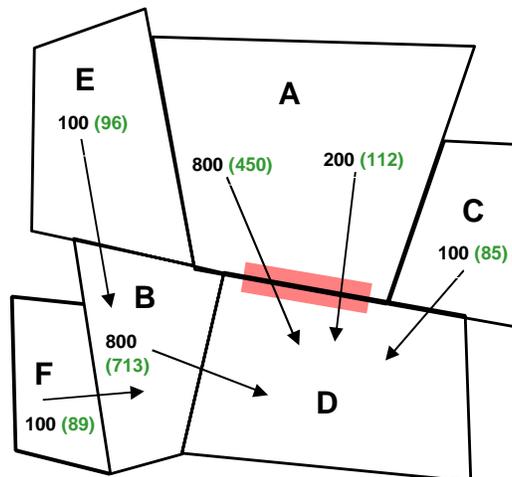
Appendix B. Transaction Curtailment Formula

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 <i>contribute</i> 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 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 Section 4, "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.
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).

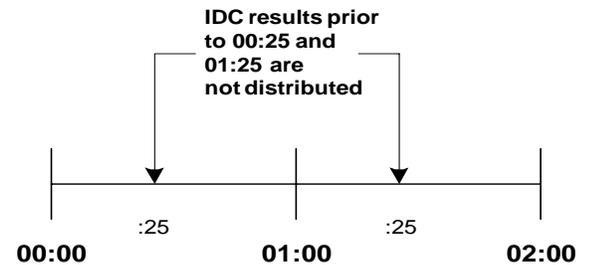


Figure 5 - IDC report may be run prior to 00:25, but results are not distributed.

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	$850 \text{ MW} - 800 \text{ MW} = 50 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 50 \text{ MW} = 900 \text{ MW}$

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	$1000 \text{ MW} - 800 \text{ MW} = 200 \text{ MW}$
Amount to enter into IDC for Transactions using Point-to-Point Transmission Service	$950 \text{ MW} - 200 \text{ MW} = 750 \text{ MW}$

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	$750 \text{ MW} - 800 \text{ MW} = -50 \text{ MW}$ 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 <i>lesser</i> 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 <i>after</i> 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

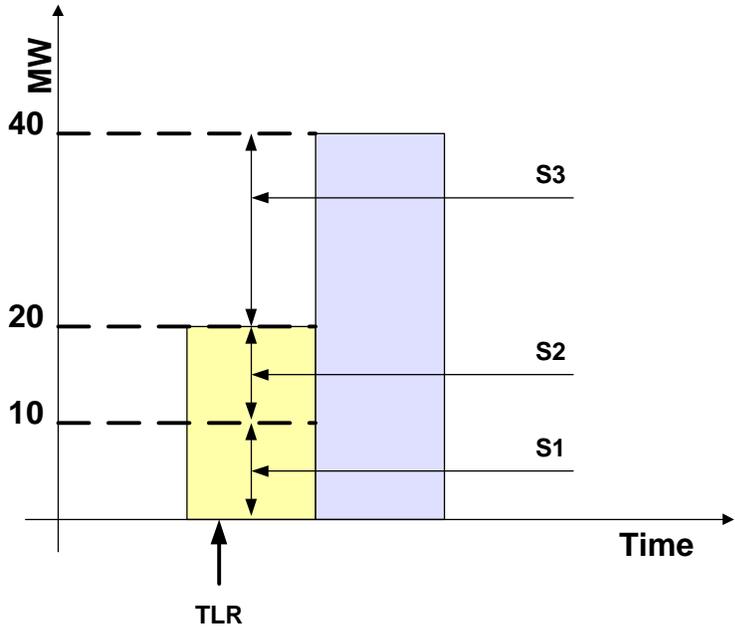
There are cases in which a tag may be marked with a composite state of ATTN_REQD to indicate that tag Authority/Approval failed to communicate or there is an inconsistency between the validation software of different tag Authority/Approval entities. In this situation, the tag is no longer subject to 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 an Interchange Transaction under different circumstances of current-hour and next-hour schedules and active MW flowing as modified by tag adjust table in E-Tag.

Example 1 – 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

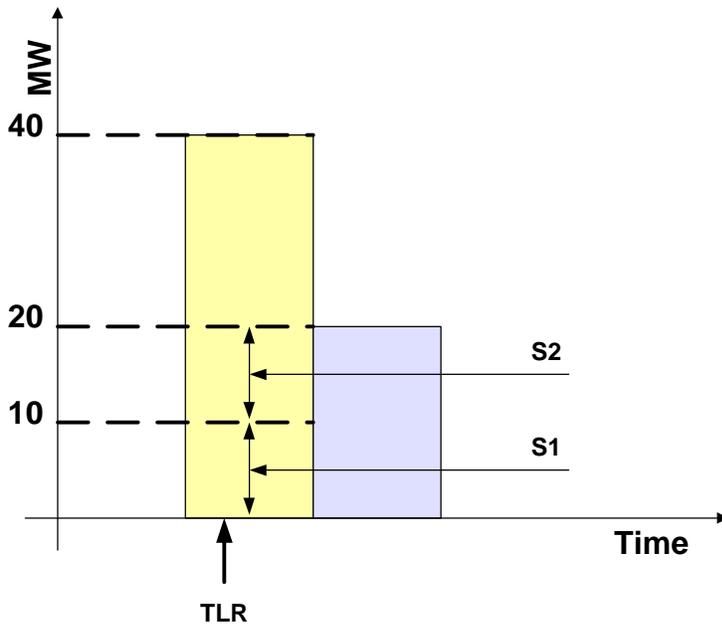


Sub-priorities for Transaction MW:

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
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

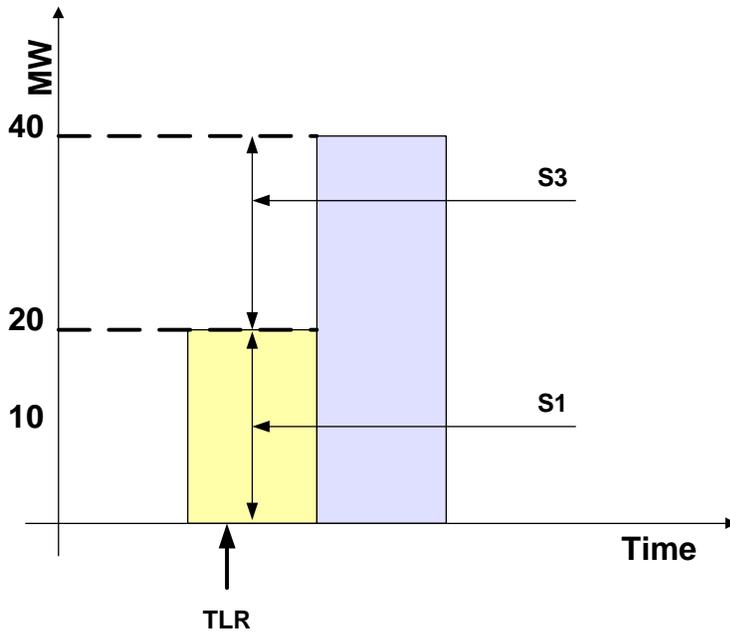


Sub-priorities for Transaction MW:

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	10 MW	Maintain current curtailed flow
S2	+10 MW	Reload to <i>lesser</i> 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

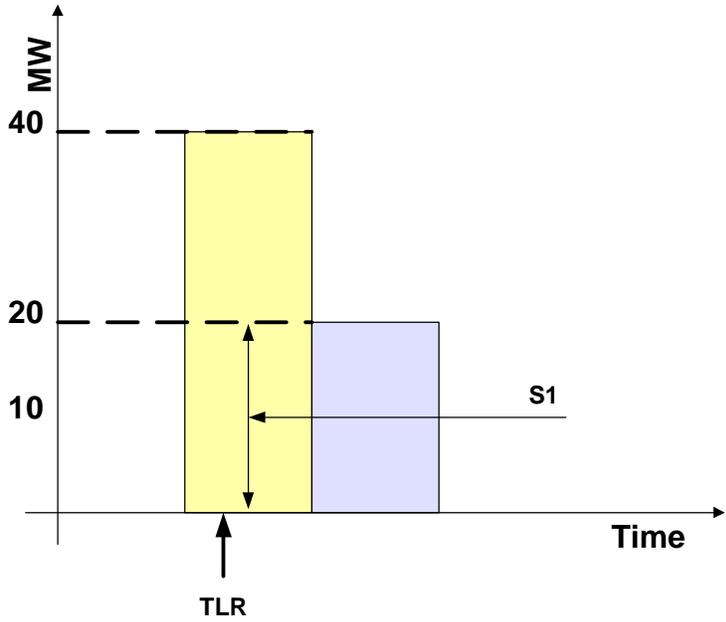
Energy Profile: Current hour	20 MW
Actual flow following curtailment: Current hour	20 MW (no curtailment)
Energy Profile: Next hour	40 MW



<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Maintain current flow (not curtailed)
S2	+0 MW	Reload to <i>lesser</i> 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

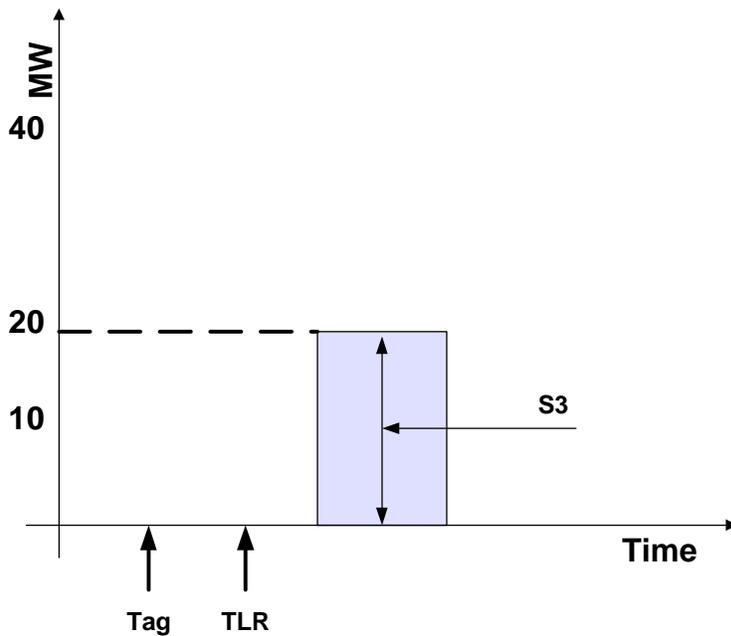


Sub-priorities for Transaction MW:

<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	20 MW	Reduce flow to next-hour Energy Profile (20MW)
S2	+0 MW	Reload to <i>lesser</i> 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 <i>after</i> TLR initiated)
Energy Profile: Next hour	20 MW



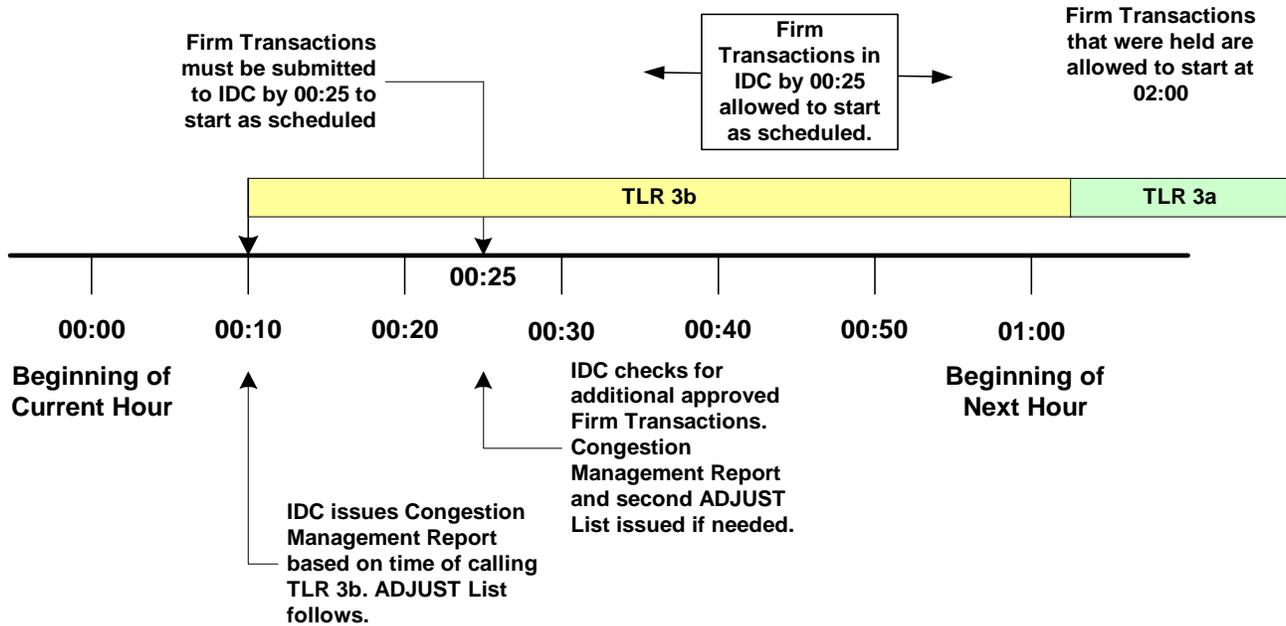
<i>Sub-Priority</i>	<i>MW Value</i>	<i>Explanation</i>
S1	0 MW	Transaction was not allowed to start
S2	+0 MW	Transaction was not allowed to start
S3	+20 MW	Next-hour Energy Profile is 20MW
S4	+0	Tag submitted prior to TLR

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:

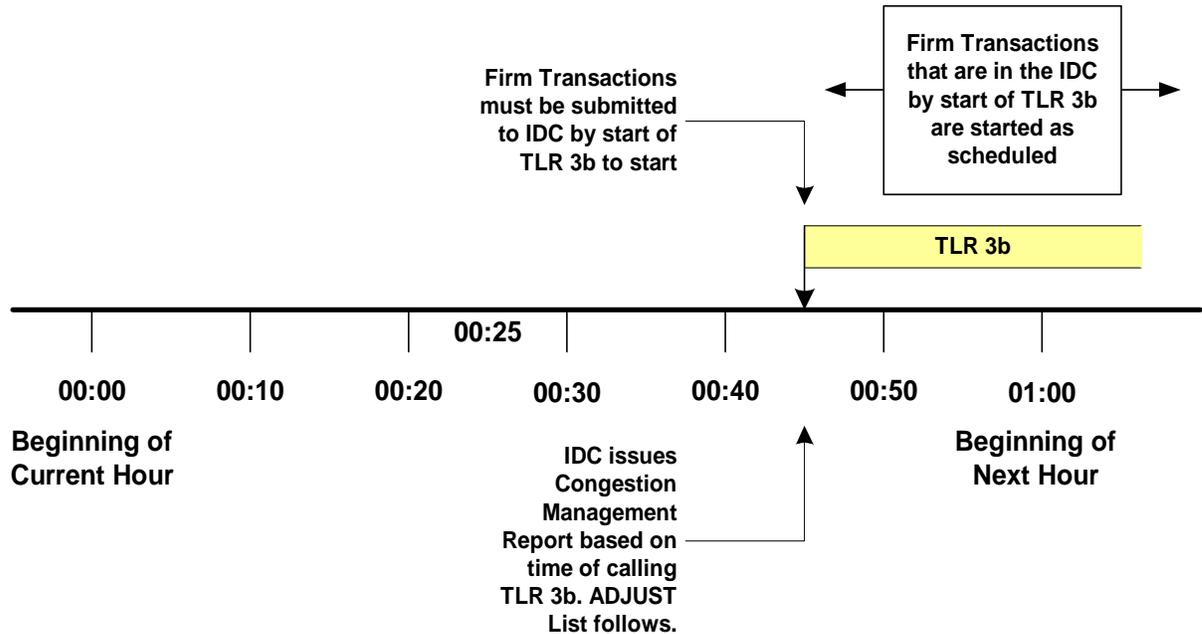
Case 1: TLR 3b is called between 00:00 and 00:25 and the Interchange Transaction using Firm Point-to-Point Transmission Service is submitted to IDC by 00:25.



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.

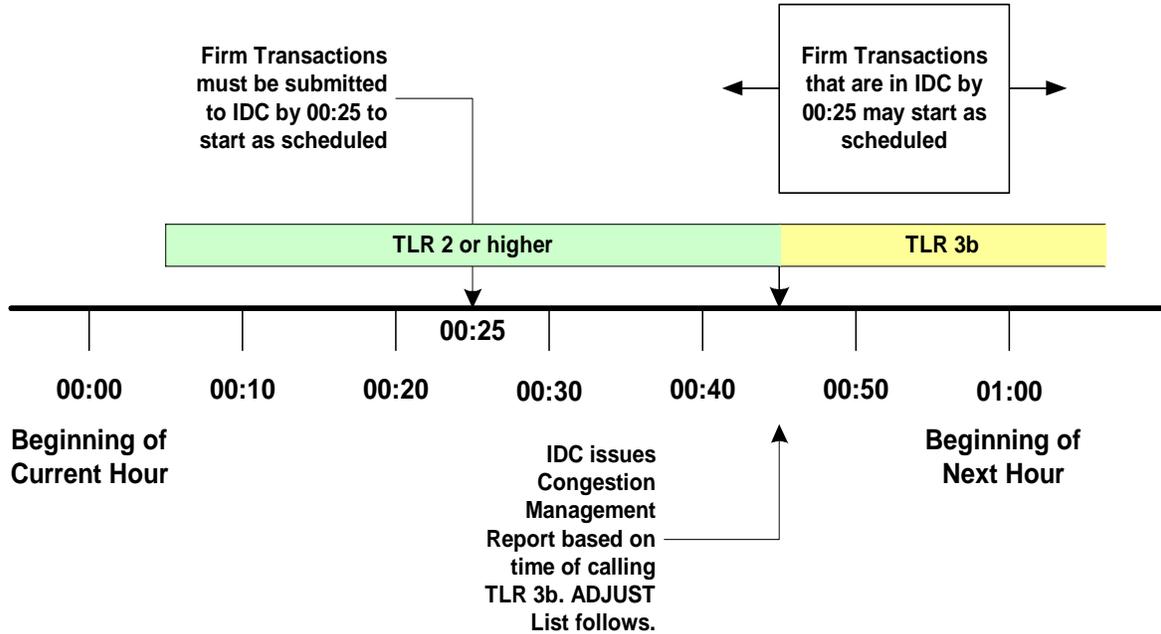
7. Once the SOL or IROL violation is mitigated, the Reliability Coordinator shall call a TLR Level 3a (or lower). If a TLR Level 3a is called:
 - a. Interchange Transactions using Firm Point-to-Point Transmission Service that were submitted to the IDC by 00:25 will be allowed to start as scheduled at 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.



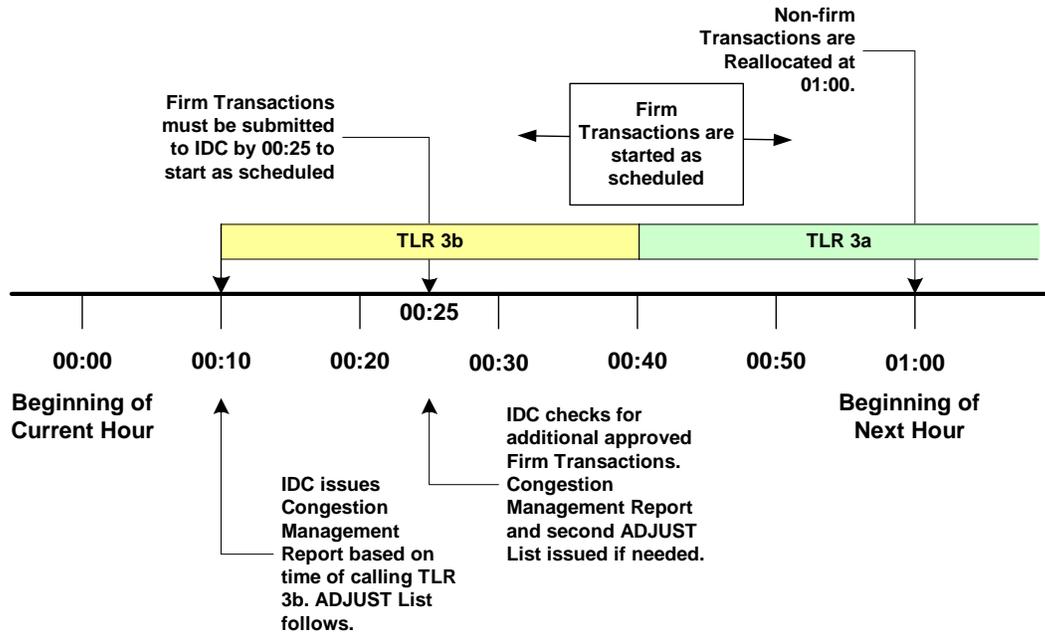
1. The IDC will examine the current hour (00) and next hour (01) for all Interchange Transactions.
2. The IDC will issue an ADJUST List at the time the TLR 3b is called. The ADJUST List will include additional curtailments of Interchange Transactions using Non-firm Point-to-Point Transmission Service 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.



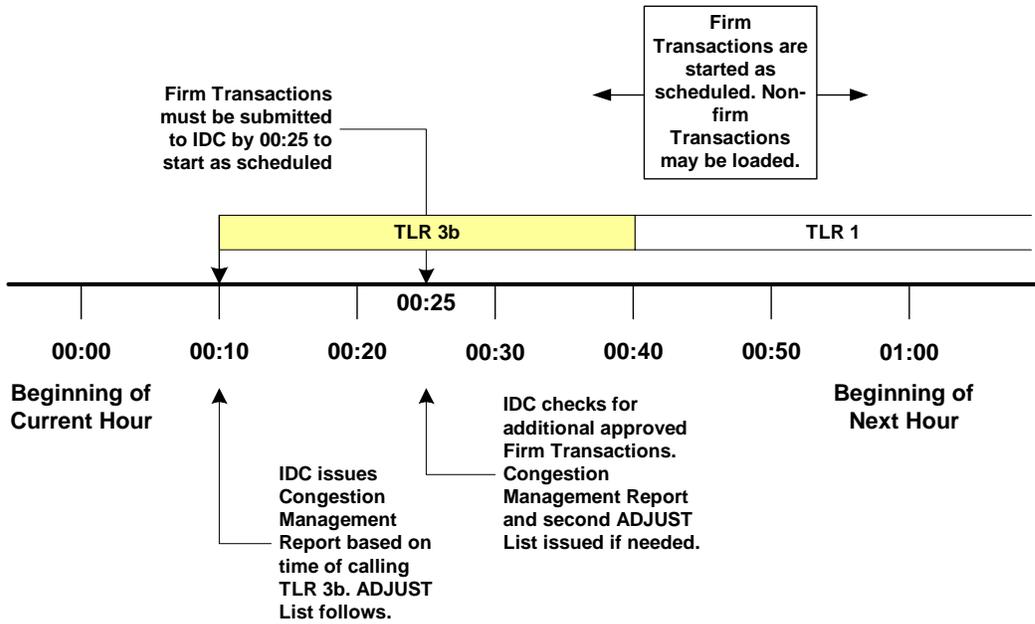
If a TLR 2 or higher has been issued and 3B is subsequently issued, then only those Interchange Transactions using Firm Point-to-Point Transmission Service that had been submitted to the IDC by 00:25 will be allowed to start as scheduled. All other Interchange Transactions are held.

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

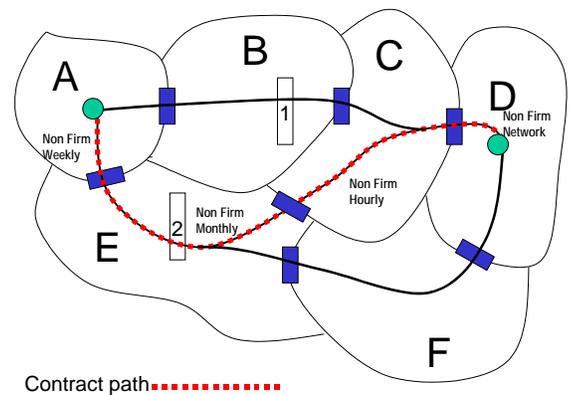
This section explains, by example, the obligations of the Transmission Service Providers on and off the Contract Path when calling for Transmission Loading Relief. (References to Principles refer to **Requirement 4, “Mitigating Constraints On and Off the Contract Path during TLR,”** on the preceding 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.

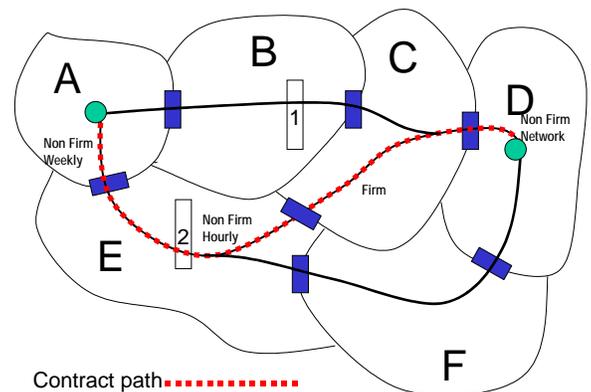
Case 1: E is a non-firm Monthly path; C is non-firm Hourly; E has Constraint at #2

- 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).



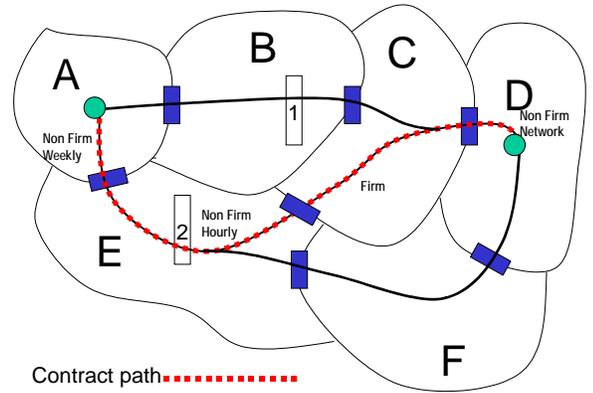
Case 2: E is a non-firm hourly path, C is firm; E has Constraint at #2

- 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).



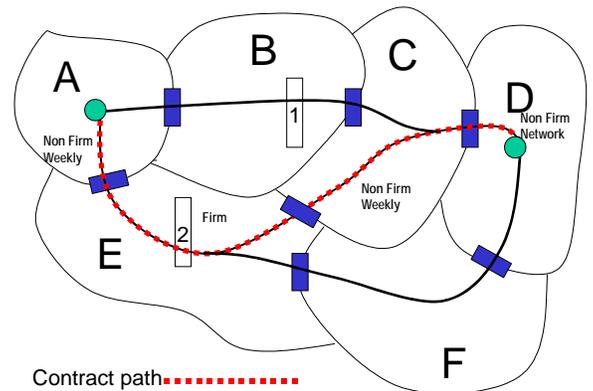
Case 3: E is a non-firm hourly path, C is firm, B has Constraint at #1

- 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).



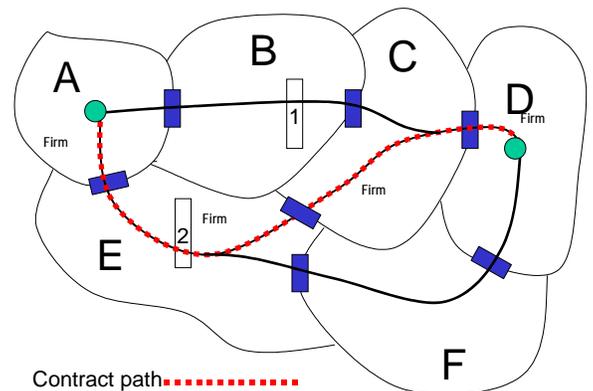
Case 4: E is a firm path; A, D, and C are Non-firm; E has Constraint at #2

- 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).



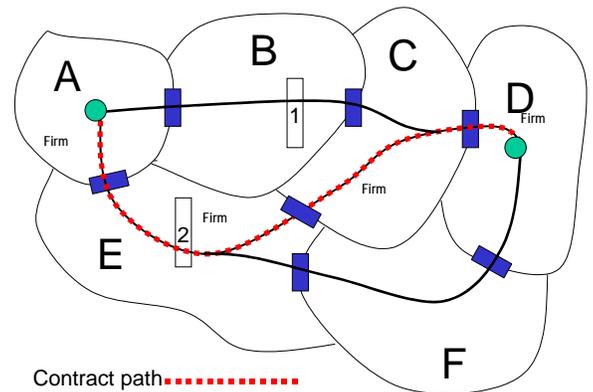
Case 5: The entire path (A-E-C-D) is firm; E has Constraint at #2

- 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).



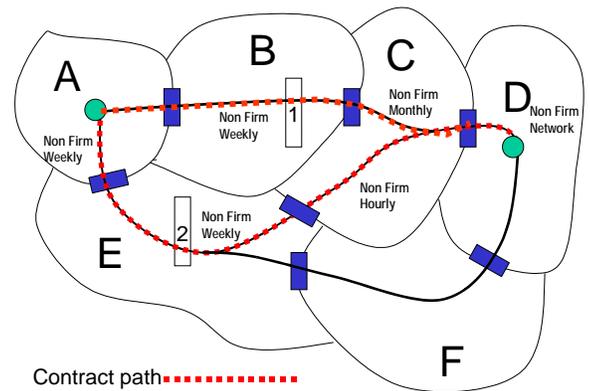
Case 6: The entire path (A-E-C-D) is firm; B has Constraint at #1.

- 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).



When completed, email to: gerry.cauley@nerc.net

Standard Authorization Request Form

Title of Proposed Standard	Reliability Coordination – Transmission Loading Relief IRO-006-0
Request Date	Revised 10/3/06

SAR Requestor Information	SAR Type (Put an 'x' in front of one of these selections)
Name David Zwergel	<input type="checkbox"/> New Standard
Primary Contact David Zwergel	<input checked="" type="checkbox"/> Revision to existing Standard
Telephone (317) 249-5452 Fax (317) 249-5910	<input type="checkbox"/> Withdrawal of existing Standard
E-mail dzwergel@midwestiso.org	<input type="checkbox"/> Urgent Action

Purpose/Industry Need (Provide one or two sentences)

In August 2004, NERC and NAESB agreed to immediately begin a joint effort to update the Eastern Interconnection TLR Procedure, as reflected in Attachment 1 to reliability standard IRO-006-0, to divide the reliability requirements and business practices, and to incorporate other necessary improvements to the TLR procedure. In December 2004 NERC and NAESB formed the joint TLR Subcommittee to clarify and focus Attachment 1 to NERC reliability standard IRO-006-0 on the TLR requirements that are necessary for reliability, as distinguished from those TLR requirements that are business practices. In August 2006 NERC formed the SAR drafting team for this activity.

Reliability Functions

The Standard will Apply to the Following Functions (Check box for each one that applies by double clicking the grey boxes.)		
<input checked="" type="checkbox"/>	Reliability Authority	Ensures the reliability of the bulk transmission system within its Reliability Authority area. This is the highest reliability authority.
<input checked="" type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
<input type="checkbox"/>	Interchange Authority	Authorizes valid and balanced Interchange Schedules
<input type="checkbox"/>	Planning Authority	Plans the bulk electric system
<input type="checkbox"/>	Resource Planner	Develops a long-term (>1year) plan for the resource adequacy of specific loads within a Planning Authority area.
<input type="checkbox"/>	Transmission Planner	Develops a long-term (>1 year) plan for the reliability of transmission systems within its portion of the Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
<input checked="" type="checkbox"/>	Transmission Owner	Owns transmission facilities
<input checked="" type="checkbox"/>	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders
<input type="checkbox"/>	Distribution Provider	Provides and operates the “wires” between the transmission system and the customer
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generation unit(s)
<input checked="" type="checkbox"/>	Generator Operator	Operates generation unit(s) and performs the functions of supplying energy and Interconnected Operations Services
<input checked="" type="checkbox"/>	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required
<input checked="" type="checkbox"/>	Market Operator	Integrates energy, capacity, balancing, and transmission resources to achieve an economic, reliability-constrained dispatch.
<input checked="" type="checkbox"/>	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user

Reliability and Market Interface Principles

Applicable Reliability Principles (Check boxes for all that apply by double clicking the grey boxes.)	
<input checked="" type="checkbox"/>	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input type="checkbox"/>	2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/>	3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input checked="" type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
<input checked="" type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
<input type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions.
<input checked="" type="checkbox"/>	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
Does the proposed Standard comply with all of the following Market Interface Principles? (Select 'yes' or 'no' from the drop-down box by double clicking the grey area.)	
1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes	
2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes	
3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes	
4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes	
5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes	

Detailed Description (Provide enough detail so that an independent entity familiar with the industry could draft, modify, or withdraw a Standard based on this description.)

NERC and NAESB formed the joint TLR Subcommittee with the charge to review Attachment 1 (Transmission Loading Relief Procedure — Eastern Interconnection) of IRO-006-0 (Reliability Coordination — Transmission Loading Relief), and to identify each reliability requirement and business practice embedded within the the TLR procedure. The joint NERC/NAESB TLR Subcommittee completed its charge on June 1, 2005, when the subcommittee approved a Final Consensus Division of TLR for Version 0 Reliability Practices [Standards] and a Final Consensus Division of TLR for Version 0 Business Practices. NAESB subsequently adopted the business practice document as a business practice standard.

This reliability standards development effort will begin by assessing for completeness and accuracy the revised Attachment 1 developed by the TLR Subcommittee using the SAR drafting team's annotated TLR procedure that indicates the agreement for the functional split. The end state of this standard development effort will be a revised Attachment 1 to reliability standard IRO-006-3, and working in coordination with NAESB, a revised NAESB TLR business practice.

When established, it is anticipated that the standard drafting team will work with NAESB to jointly publish the respective NERC and NAESB standards in an integrated document.

Related Standards

Standard No.	Explanation
IRO-006-0	Attachment 1 (TLR Procedure) to be replaced by a similar document addressing only the reliability elements of the TLR Procedure.
IRO-006-0	The urgent action revision to Attachment 1 that addressed the holding of dynamic schedules during TLR Level 1-4 will be incorporated into the NAESB TLR business practices.

Related SARs

SAR ID	Explanation

Regional Differences

Region	Explanation
ECAR	
ERCOT	
FRCC	
MAAC	
MAIN	
MAPP	
NPCC	
SERC	
SPP	
WECC	

Related NERC Operating Policies or Planning Standards

ID	Explanation

When completed, email to: gerry.cauley@nerc.net

Standard Authorization Request Form

Title of Proposed Standard	Reliability Coordination – Transmission Loading Relief IRO-006-0
Request Date	Revised 10/3/06

SAR Requestor Information	SAR Type (Put an 'x' in front of one of these selections)
Name David Zwergel	<input type="checkbox"/> New Standard
Primary Contact David Zwergel	<input checked="" type="checkbox"/> Revision to existing Standard
Telephone (317) 249-5452 Fax (317) 249-5910	<input type="checkbox"/> Withdrawal of existing Standard
E-mail dzwergel@midwestiso.org	<input type="checkbox"/> Urgent Action

Purpose/Industry Need (Provide one or two sentences)

In August 2004, NERC and NAESB agreed to immediately begin a joint effort to update the Eastern Interconnection TLR Procedure, as reflected in Attachment 1 to reliability standard IRO-006-0, to divide the reliability requirements and business practices, and to incorporate other necessary improvements to the TLR procedure. In December 2004 NERC and NAESB formed the joint TLR Subcommittee to clarify and focus Attachment 1 to NERC reliability standard IRO-006-0 on the TLR requirements that are necessary for reliability, as distinguished from those TLR requirements that are business practices. In August 2006 NERC formed the SAR drafting team for this activity.

Reliability Functions

The Standard will Apply to the Following Functions (Check box for each one that applies by double clicking the grey boxes.)		
<input checked="" type="checkbox"/>	Reliability Authority	Ensures the reliability of the bulk transmission system within its Reliability Authority area. This is the highest reliability authority.
<input checked="" type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
<input type="checkbox"/>	Interchange Authority	Authorizes valid and balanced Interchange Schedules
<input type="checkbox"/>	Planning Authority	Plans the bulk electric system
<input type="checkbox"/>	Resource Planner	Develops a long-term (>1year) plan for the resource adequacy of specific loads within a Planning Authority area.
<input type="checkbox"/>	Transmission Planner	Develops a long-term (>1 year) plan for the reliability of transmission systems within its portion of the Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
<input checked="" type="checkbox"/>	Transmission Owner	Owns transmission facilities
<input checked="" type="checkbox"/>	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders
<input type="checkbox"/>	Distribution Provider	Provides and operates the “wires” between the transmission system and the customer
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generation unit(s)
<input checked="" type="checkbox"/>	Generator Operator	Operates generation unit(s) and performs the functions of supplying energy and Interconnected Operations Services
<input checked="" type="checkbox"/>	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required
<input checked="" type="checkbox"/>	Market Operator	Integrates energy, capacity, balancing, and transmission resources to achieve an economic, reliability-constrained dispatch.
<input checked="" type="checkbox"/>	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user

Reliability and Market Interface Principles

Applicable Reliability Principles (Check boxes for all that apply by double clicking the grey boxes.)	
<input checked="" type="checkbox"/>	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input type="checkbox"/>	2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/>	3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input checked="" type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
<input checked="" type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
<input type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions.
<input checked="" type="checkbox"/>	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
Does the proposed Standard comply with all of the following Market Interface Principles? (Select 'yes' or 'no' from the drop-down box by double clicking the grey area.)	
1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes	
2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes	
3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes	
4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes	
5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes	

Detailed Description (Provide enough detail so that an independent entity familiar with the industry could draft, modify, or withdraw a Standard based on this description.)

NERC and NAESB formed the joint TLR Subcommittee with the charge to review Attachment 1 (Transmission Loading Relief Procedure — Eastern Interconnection) of IRO-006-0 (Reliability Coordination — Transmission Loading Relief), and to identify each reliability requirement and business practice embedded within the the TLR procedure. The joint NERC/NAESB TLR Subcommittee completed its charge on June 1, 2005, when the subcommittee approved a Final Consensus Division of TLR for Version 0 Reliability Practices [Standards] and a Final Consensus Division of TLR for Version 0 Business Practices. NAESB subsequently adopted the business practice document as a business practice standard.

This reliability standards development effort will begin by assessing for completeness and accuracy the revised Attachment 1 developed by the TLR Subcommittee using the SAR drafting team's annotated TLR procedure that indicates the agreement for the functional split. The end state of this standard development effort will be a revised Attachment 1 to reliability standard IRO-006-3, and working in coordination with NAESB, a revised NAESB TLR business practice.

When established, it is anticipated that the standard drafting team will work with NAESB to jointly publish the respective NERC and NAESB standards in an integrated document.

Related Standards

Standard No.	Explanation
IRO-006-0	Attachment 1 (TLR Procedure) to be replaced by a similar document addressing only the reliability elements of the TLR Procedure.
IRO-006-0	The urgent action revision to Attachment 1 that addressed the holding of dynamic schedules during TLR Level 1-4 will be incorporated into the NAESB TLR business practices.

Related SARs

SAR ID	Explanation

Regional Differences

Region	Explanation
ECAR	
ERCOT	
FRCC	
MAAC	
MAIN	
MAPP	
NPCC	
SERC	
SPP	
WECC	

Related NERC Operating Policies or Planning Standards

ID	Explanation

October 3, 2006

Transmission Loading Relief (TLR) Drafting Team

Chairman

David T. Zwergel Director, East Region Operations	Midwest ISO, Inc. 701 City Center Drive Carmel, Indiana 46032	(317) 249-5452 (317) 249-5910 Fx dzwergel@ midwestiso.org	
Daryn Barker Sr. Analyst - Market Policy	E.ON-US Energy Services Inc. 220 W. Main Street 7th Floor Louisville, Kentucky 40202	(502) 627-3296 daryn.barker@ eon-us.com	
Joel J. Dison Project Coordinator	Southern Company Services, Inc. 600 N. 18th Street Birmingham, Alabama 35203	(205) 257-6481 (205) 257-5858 Fx jjdison@ southernco.com	
Frank J. Koza Executive Director, System Operations	PJM Interconnection, L.L.C. 955 Jefferson Avenue Valley Forge Corporate Center Norristown, Pennsylvania 19403-2497	(610) 666-4228 (610) 666-4282 Fx kozaf@pjm.com	
Carol S. Mangum-Goins Project Manager, Transmission System Services	Tennessee Valley Authority 1101 Market Street PCC-2A Chattanooga, Tennessee 37402-2801	(423) 697-2930 (423) 697-4120 Fx csmangum@tva.gov	
Dave Marton Senior Engineer	FirstEnergy Solutions 395 Ghent Road Akron, Ohio 44333	(330) 315-7420 (330) 315-6773 Fx dpmarton@ firstenergycorp.com	
Narinder K. Saini Policy Consultant	Entergy Services, Inc. 5201 W. Barraque Pine Bluff, Arkansas 71603	(870) 543-5420 (870) 541-4528 Fx nsaini@ entergy.com	
NERC Consultant Coordinator	William W. Lohrman Managing Director	Prague Power, LLC 31 Maple Street, Suite 102 Bernardsville, New Jersey 07924	(908) 630-0289 wwlohrman@ praguepower.com