

Consideration of Comments

Project Name:	2017-01 Modifications to BAL-003-1.1 SAR
Comment Period Start Date:	9/6/2018
Comment Period End Date:	9/20/2018
Associated Ballots:	

There were 18 sets of responses, including comments from approximately 78 different people from approximately 56 companies representing 10 of the Industry Segments as shown in the table on the following pages.

All comments submitted can be reviewed in their original format on the [project page](#).

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 Senior Director of Engineering and Standards, [Howard Gugel](#) (via email) or at (404) 446-9693.

Questions

1. The SDT is proposing replacing RCC by proposing a new methodology for determining the RLPC that is consistent across all Interconnections, and is designed to maintain reliability for the respective Interconnections. This methodology is described in the *Resource Loss Protection Criteria* document. Is this methodology appropriate for determination of the event that each Interconnection is protecting against? If not, please provide specific language on the proposed revision.
2. Do you agree with using the two Most Severe Single Contingencies (MSSCs) in each Interconnection as the basis for an Interconnection's IFRO? If you do not agree, or if you agree but have comments or suggestions on the SDT's recommendation, please provide your explanation and suggested language.
3. The standard drafting team is proposing an IFRO methodology that makes changes only when technically justified. This methodology should maintain a stable IFRO rather than implementing immaterial modifications. Do you agree with keeping IFROs stable over time, similar to CPS1, unless Interconnection Frequency Response significantly declines? If you do not agree, or if you agree but have comments or suggestions on the SDT's recommendation, please provide your explanation and suggested language.
4. The IFRO methodology proposed by the drafting team separates several variables from the annual modification of the IFRO, including the C to B ratio and delta frequency, and simplifies the calculation. These variables are being reviewed as part of the analysis process that will occur outside of the standard. Do you agree with the separation of the variables from the annual calculation? If you do not agree, or if you agree but have comments or suggestions on the SDT's recommendation, please provide your explanation and suggested language.
5. With the modification to the RLPC and IFRO methodologies, the Eastern Interconnection IFRO will experience an approximate 28 percent decrease, and Hydro Quebec will experience an approximate 17 percent increase. The standard drafting team recommends limiting the IFRO changes by no more than 10 percent annually and implementing percentage of change over the time period necessary to achieve the appropriate IFRO levels. Once the transition is complete, modifications to IFRO would not be limited. Do you agree with this staged implementation of the methodology?

6. The drafting team is proposing to move items not related to entity compliance from BAL-003-1.1, Attachment A to the *Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard* document. The SAR recommended such changes to Attachment A. Do you agree that the changes to these documents address the SAR recommendations?

7. Please provide any additional comments for the SDT to consider that you have not already provided on the Phase I modifications to BAL-003-1.1.

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
PJM Interconnection, L.L.C.	Albert DiCaprio	2	RF,SERC	ISO Standards Review Committee	Ben Li	IESO	2	NPCC
					Mark Holman	PJM	2	RF
					Kathleen Goodman	ISONE	2	NPCC
					Greg Campoli	NYISO	2	NPCC
					Terry Bilke	MISO	2	RF
MRO	Dana Klem	1,2,3,4,5,6	MRO	MRO NSRF	Joseph DePoorter	Madison Gas & Electric	3,4,5,6	MRO
					Larry Heckert	Alliant Energy	4	MRO
					Amy Casuscelli	Xcel Energy	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jodi Jensen	Western Area Power Administration	1,6	MRO
					Kayleigh Wilkerson	Lincoln Electric System	1,3,5,6	MRO
					Mahmood Safi	Omaha Public Power District	1,3,5,6	MRO
					Brad Parret	Minnesota Power	1,5	MRO

					Terry Harbour	MidAmerican Energy Company	1,3	MRO
					Tom Breene	Wisconsin Public Service Corporation	3,5,6	MRO
					Jeremy Voll	Basin Electric Power Cooperative	1	MRO
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Mike Morrow	Midcontinent ISO	2	MRO
PPL - Louisville Gas and Electric Co.	Devin Shines	3,5,6	RF,SERC	Louisville Gas and Electric Company and Kentucky Utilities Company	Charles Freibert	PPL - Louisville Gas and Electric Co.	3	SERC
					JULIE HOSTRANDER	PPL - Louisville Gas and Electric Co.	5	SERC
					Linn Oelker	PPL - Louisville Gas and Electric Co.	6	SERC
Seattle City Light	Ginette Lacasse	1,3,4,5,6	WECC	Seattle City Light Ballot Body	Pawel Krupa	Seattle City Light	1	WECC
					Hao Li	Seattle City Light	4	WECC

					Bud (Charles) Freeman	Seattle City Light	6	WECC
					Mike Haynes	Seattle City Light	5	WECC
					Michael Watkins	Seattle City Light	1,4	WECC
					Faz Kasraie	Seattle City Light	5	WECC
					John Clark	Seattle City Light	6	WECC
					Tuan Tran	Seattle City Light	3	WECC
					Laurrie Hammack	Seattle City Light	3	WECC
Southwest Power Pool, Inc. (RTO)	Jim Williams	2	MRO,SERC	SPP Standards Review Group	Jim Williams	SPP	2	MRO
					Shannon Mickens	SPP	2	MRO
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	RSC no Dominion	Guy V. Zito	Northeast Power Coordinating Council	10	NPCC
					Randy MacDonald	New Brunswick Power	2	NPCC

Wayne Sipperly	New York Power Authority	4	NPCC
Glen Smith	Entergy Services	4	NPCC
Brian Robinson	Utility Services	5	NPCC
Alan Adamson	New York State Reliability Council	7	NPCC
Edward Bedder	Orange & Rockland Utilities	1	NPCC
David Burke	Orange & Rockland Utilities	3	NPCC
Michele Tondalo	UI	1	NPCC
Laura Mcleod	NB Power	1	NPCC
David Ramkalawan	Ontario Power Generation Inc.	5	NPCC
Helen Lainis	IESO	2	NPCC
Michael Schiavone	National Grid	1	NPCC
Michael Jones	National Grid	3	NPCC

Michael Forte	Con Ed - Consolidated Edison	1	NPCC
Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
Sean Cavote	PSEG	4	NPCC
Kathleen Goodman	ISO-NE	2	NPCC
Quintin Lee	Eversource Energy	1	NPCC
Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1,5	NPCC
Salvatore Spagnolo	New York Power Authority	1	NPCC
Shivaz Chopra	New York Power Authority	6	NPCC
David Kiguel	Independent	NA - Not Applicable	NPCC
Silvia Mitchell	NextEra Energy -	6	NPCC

					Florida Power and Light Co.		
				Caroline Dupuis	Hydro Quebec	1	NPCC
				Chantal Mazza	Hydro Quebec	2	NPCC
				Paul Malozewski	Hydro One Networks, Inc.	3	NPCC
				Gregory Campoli	New York Independent System Operator	2	NPCC

1. The SDT is proposing replacing RCC by proposing a new methodology for determining the RLPC that is consistent across all Interconnections, and is designed to maintain reliability for the respective Interconnections. This methodology is described in the *Resource Loss Protection Criteria* document. Is this methodology appropriate for determination of the event that each Interconnection is protecting against? If not, please provide specific language on the proposed revision.

Summary Responses:

The effort of the SDT is to develop a consistent RLPC methodology that is consistent across all Interconnections. The proposed methodology for IFRO will be adjustable per Interconnection if it is determined that an Interconnection’s response is declining, while maintaining the consistent approach to the baseline RLPC.

The SDT will evaluate the generator governor response in Phase II of this project. Ultimately, the SDT is defining a methodology that identifies the magnitude needed to protect the reliability of the Interconnection. The RLPC value should always equal or exceed the largest N-2 Event. If the RLPC is set equal to or larger than the largest N-2 Event, the probability of an underfrequency load shedding event stays the same or decreases. The methodology provides an RLPC greater than or equal to the largest N-2 Event for each Interconnection. The SDT will provide detailed explanation as the project develops. Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented in a single step.

Glenn Barry - Los Angeles Department of Water and Power - 1,3,5,6

Answer	No
Document Name	
Comment	
<p>The methodology is sound in principle and intent, however the utilization of MSSC may be incorrect. MSSC is a defined term for reserve planning, and if the intent is to look at interconnection resource loss, then using the term MSSC may mislead entities and result in unintended information being submitted and utilized in the IFRO calculation. Perhaps not using MSSC, but defining a different term and providing more clarification and instructions are warranted.</p>	

Likes	0
Dislikes	0
Response	
Thank you for your comment. The SDT understands your concern and will address it during development of the project.	
Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	No
Document Name	
Comment	
Xcel Energy supports the present N-2 Event and also including the N-2 RAS in the methodology. The present N-2 event approach has resulted in reliable operations in the West. Linking reserves to a single credible N-2 event (generation loss or RAS) is reasonable and justifiable. We are not aware of the basis for the Eastern Interconnection IFROs using the largest event in the last 10 years. While the goal RLPC consistent across all Interconnections is commendable, it may not be reasonable to expect each to have the same IFRO basis. If one Interconnection's Frequency Response is declining over several years we would expect their IFRO to be adjusted accordingly.	
Likes	0
Dislikes	0
Response	
Thank you for your comments. The effort of the SDT is to develop a consistent RLPC methodology that is consistent across all Interconnections. The proposed methodology for IFRO will be adjustable per Interconnection if it is determined that an Interconnection's response is declining, while maintaining the consistent approach to the baseline RLPC.	
LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	No
Document Name	
Comment	

The goal of consistency is commendable, but use of MSSC may result in unintended consequences over the present method. The term "MSSC" is used for reserve planning, and is associated with specific BAs. Using this term to determine Interconnection resource loss may result in utilizing values that are too small when calculating IFRO. For example, the Interconnection loses all of a joint owned unit, but a BA loses only its portion of the unit. Therefore, the MSSC will understate the size of the loss which may result in calculating an IFRO that is inadequate. Defining a different term, and providing instruction and clarification regarding its determination, is a better approach - presuming the new term(s) is (are) technically based.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT understands your concern and will address it during development of the project.

Thomas Foltz - AEP - 3,5

Answer Yes

Document Name

Comment

AEP believes this is a reasonable and transparent methodology to determine the primary variable used to establish an IFRO.

Likes 0

Dislikes 0

Response

Thank you for your support.

Ginette Lacasse - Seattle City Light - 1,3,4,5,6 - WECC, Group Name Seattle City Light Ballot Body

Answer Yes

Document Name

Comment

No Comments

Likes 0

Dislikes 0

Response

Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer Yes

Document Name

Comment

The proposed RLPC establishes the same basis for all interconnections and eliminates the current higher expectation for the Eastern Interconnection. We struggle with the statement that establishing a minimum generator governor response for an Interconnection is a primary or important tool to protect itself from an N-2 event. For the Eastern Interconnection, the proposed N-2 event is a loss of 3209 MW and the current required FRO for the Interconnection is 1015 MW/.1 Hz. The primary protection for a sudden generation loss is established in BAL-002-2(i), if both losses occur with a single BA then the event becomes the second loss.

In the Eastern Interconnection MSSC1 and MSSC2 are both within a single BA. Thus the actual event we are protecting ourselves against is MSSC2; MSSC1 is addressed by the BA's response iaw BAL-002-2(i).

Are we properly defining the event that this standard is assisting the BAs in protecting themselves against?

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT will evaluate the generator governor response in Phase II of this project. Ultimately, the SDT is defining a methodology that identifies the magnitude needed to protect the reliability of the Interconnection. The RLPC value should always equal or exceed the largest N-2 Event. If the RLPC is set equal to or larger than the largest N-2 Event, the probability of an underfrequency load shedding event stays the same or decreases. The methodology provides an RLPC greater than or equal to the largest N-2 Event for each Interconnection. The SDT will provide detailed explanation as the project develops. Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation and an increase to the IFRO will be implemented in a single step.

Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC

Answer	Yes
Document Name	
Comment	
<p>BPA is in support of replacing the RLPC so that it is consistent across all interconnections. The method presented in the draft <i>Resource Loss Protection Criteria</i> document seems appropriate for determination of the event that each Interconnection should protect against. Specifically, BPA supports the use of either the largest credible and studied (N-2) type contingency that results in a frequency deviation for a known MW loss, or the summation of the two largest MSSCs in an interconnection. While it is not likely that two separate MSSC events would occur at the same time, it seems like a plausible way to derive a number to protect against. The BAL-003 standard should protect against a larger, infrequent event.</p> <p>BPA suggests the document clarify that credible and studied N-2 events are included in the evaluation. The way the <i>Resource Loss Protection Criteria</i> document is worded makes it seem like only N-2 RAS events are looked at in the list of N-2 events.</p>	
Likes	0
Dislikes	0

Response

Thank you for your comment. The SDT agrees and will clarify this issue as the project develops.

Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6

Answer	Yes
Document Name	
Comment	
<p>In the Proposal section of the Proposed RLPC document, it states that each BA will submit their two largest resource losses. It then says that data will include “Initiating event, and Megawatt (MW) loss. But the proposed revised FRS Form 1 only has one empty box for MSSC1 and MSSC2, presumably for the MW value. To reduce the potential for confusion, AZPS recommends clarifying the language within the proposal section or the boxes on the FRS Form 1, whichever is the desired result.</p> <p>Additionally, on page 4 of Proposed RLPC document, an incorrect acronym RPLC is used in the header.</p>	
Likes	0
Dislikes	0
Response	
Thank you for your comment. The SDT agrees and will clarify this issue as the project develops.	
Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
ERCOT understands the need to address the existing inconsistencies among different interconnections with respect to the current RCC criteria, but does not necessarily agree with the proposed approach.	
Likes	0
Dislikes	0
Response	

Thank you for your comment.

Leonard Kula - Independent Electricity System Operator - 2

Answer Yes

Document Name

Comment

We appreciate the new consistent approach applied between all interconnections.

Likes 0

Dislikes 0

Response

Thank you for your supportive comment.

Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Jim Williams - Southwest Power Pool, Inc. (RTO) - 2 - MRO,SERC, Group Name SPP Standards Review Group

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Erickson - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

2. Do you agree with using the two Most Severe Single Contingencies (MSSCs) in each Interconnection as the basis for an Interconnection’s IFRO? If you do not agree, or if you agree but have comments or suggestions on the SDT’s recommendation, please provide your explanation and suggested language.

Summary Responses:

The SDT is proposing the N-2 methodology which is in place today for every Interconnection, with the exception of the Eastern Interconnection. Ultimately, the SDT is defining a methodology that identifies the magnitude needed to protect the reliability of the Interconnection. The RLPC value should always equal or exceed the largest N-2 Event. If the RLPC is set equal to or larger than the largest N-2 Event, the probability of an underfrequency load shedding event stays the same or decreases. The methodology provides an RLPC greater than or equal to the largest N-2 Event for each Interconnection. The SDT will provide detailed explanation as the project develops.

Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2

Answer

No

Document Name

Comment

ERCOT disagrees in principle with the proposed approach of using the two largest units as a credible contingency, primarily because the probability of two units located hundreds of miles apart tripping on a single initiating event is extremely low. This is not a credible risk that should be addressed by the NERC standards. Depending on how the RLPC is determined, if a large Generator or a DC Tie were to be interconnected hundreds of miles away from another large Generator, the proposed RLPC definition would require ERCOT to procure significant additional reserves at great expense in order to protect UFLS against the proposed RLPC.

Likes 0

Dislikes 0

Response

The SDT appreciates the concern, but at this time the SDT is proposing the N-2 methodology which is in place today for every Interconnection, with the exception of the Eastern Interconnection. Ultimately, the SDT is defining a methodology that identifies the magnitude needed to protect the reliability of the Interconnection. The RLPC value should always equal or exceed the largest N-2 Event. If the RLPC is set equal to or larger than the largest N-2 Event, the probability of an underfrequency load shedding event stays the same or decreases. The methodology provides an RLPC greater than or equal to the largest N-2 Event for each Interconnection. The SDT will provide detailed explanation as the project develops.

Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RF

Answer No

Document Name

Comment

As it is uncertain where the industry will trend in future years in terms of new resource sizing and large resource retirements, there is the possibility that the magnitude of the Most Severe Single Contingencies will get smaller and possibly more will be based upon loss of transmission. Duke Energy suggests that the drafting team consider basing the IFRO on the greater of a fixed percentage of the minimum Interconnection load or the two Most Severe Single Contingencies.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT understands your concern and will conduct discussions regarding your comment during Phase II of the project.

LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6

Answer No

Document Name

Comment

MSSC may result in calculating IFRO that is insufficient to cover actual Interconnection events as previously stated. Joint owned units provide one example of using MSSC and achieving a non-conservative IFRO value. Another example relates to loss of DC ties, where total transfer may be distributed among multiple BAs resulting in MSSCs being smaller than the Interconnection contingency.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT understands your concern and will address it during development of the project.

Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC

Answer

No

Document Name

Comment

There is no technical justification for using two MSSCs as one of the basis for IFRO. We cannot support going to a MSSC approach without strong technical analysis and supporting historical data. One suggestion is that there could be an actual event where two concurrent MSSCs exceed the single N-2 then the MSSC could become the basis for 3 years.

Likes 0

Dislikes 0

Response

Thank you for your comments. Ultimately, the SDT is defining a methodology that identifies the magnitude needed to protect the reliability of the Interconnection. The RLPC value should always equal or exceed the largest N-2 Event. If the RLPC is set equal to or larger than the largest N-2 Event, the probability of an underfrequency load shedding event stays the same or decreases. The methodology provides an RLPC greater than or equal to the largest N-2 Event for each Interconnection. The SDT will provide detailed explanation as the project develops.

Glenn Barry - Los Angeles Department of Water and Power - 1,3,5,6

Answer

No

Document Name	
Comment	
<p>MSSC is a defined term, and if the intent is to look at interconnection resource loss, then using the term MSSC may mislead entities and result in unintended information being submitted and utilized in the IFRO calculation. Perhaps not using MSSC, but defining a different term and providing more clarification and instructions are warranted.</p> <p>Example 1:</p> <p>There is a potential gap in reporting JOU/Dynamically scheduled units. LADWP has two JOU that are 900 MW (net) each but only receive 600 MW from each, with the remaining energy sinking in other BAs. It would then be reported as MSSC1 being 600 MW and MSSC2 being 600 MW. In actuality if both units were lost it would be an 1800 MW resource loss to the interconnection, and not the reported 1200 from MSSC 1 and MSSC 2 specified. Since MSSC is a defined term, LADWP would not plan to meet a 900 MW resource loss as MSSC.</p> <p>Example 2:</p> <p>This example may be unique to the Western Interconnection and PDCI operation. A BA's operational plans might consider their MSSC as their portion of PDCI schedules (since the sink BA is the reserve responsible entity for schedules that traverse PDCI). For example a sink entity may have an MSSC1 of 2300 MW to represent their maximum PDCI schedules, however this would be not be all of the schedule on PDCI, and also this would be included as part of the N-2 RAS action generation resource loss reported by a separate entity. When taking 2300 MW for MSSC1 + 1500 MW for MSSC 2 for another large unit, then the total result would be 3800 MW, larger than the N-2 RAS of 2850 MW. MSSC is a defined term for reserve planning, which can be different than assessing interconnection resource loss.</p>	
Likes	0
Dislikes	0

Response

Thank you for your comment. The SDT agrees and will clarify this issue as the project develops.

Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

Although AZPS agrees with the proposal for using the two MSSCs for the basis for an Interconnection’s IFRO, it does not believe the current proposed collection method for this data will result in what the SDT intends to collect for the following reasons:

Following the definition of MSSC, a Balancing Authority who is in a RSG would not have a discrete MSSC. As the definition states, an MSSC is a Balancing Contingency Event “within the RSG or a BA’s area that is not part of a RSG.” Therefore those Balancing Authorities inside an RSG would have nothing to report. Similarly, who will be reporting the MSSC for the RSG since RSGs do not fill out Form 1 and those MSSCs are typically the largest MSSCs.

A good illustration of this collection method concern is Palo Verde nuclear generating units. One of these units total output would not be reported by any RSG or BA area that is not part of a RSG as AZPS is part of an RSG, meaning it does not qualify as an entity who has an MSSC. Hence, this MSSC would not be appropriately captured under the current proposal.

Additionally, if a Balancing Authority inside an RSG is made to report a value, the revised form does not contemplate when a BA has a different MSSC depending on the time of year. One reason this can occur is due to Power Purchase Agreements. A BA’s MSSC during one half of the year could be their MSSC2 for the second half of the year. Here is an illustration:

BA1 MSSC1 500 MW (January– June)

BA1 MSSC2 300 MW (January– June)

BA1 MSSC1 600 MW Power Purchase Agreement (July – December)

BA1 MSSC2 500 MW (July – December)

In this example, these two resources cannot be combined to serve as both the MSSC1 and MSSC2 for all times of the year. During January–June the 600 MW unit is BA2’s MSSC. If BA1 claims the 600 MW unit as their MSSC, it is likely BA2 will claim it as well, resulting in the unit being counted twice. What should BA1’s MSSC1 and MSSC2?

For these reasons, AZPS recommends that the SDT review and revise the current proposal regarding the reporting of this information.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT agrees and will clarify this issue as the project develops.

Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC

Answer Yes

Document Name

Comment

While having two MSSC events happen at the same time is not statistically probable, using the combination of the two largest MSSCs gives a method for determining a known MW amount that the interconnection should plan for in the case of an extreme event. If it happens to be larger than already studied N-2 events, then the higher IFRO should increase reliability.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Ginette Lacasse - Seattle City Light - 1,3,4,5,6 - WECC, Group Name Seattle City Light Ballot Body

Answer Yes

Document Name

Comment	
No Comments	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 3,5	
Answer	Yes
Document Name	
Comment	
AEP believes the proposal leverages existing processes and produces a defensible result.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Albert DiCaprio - PJM Interconnection, L.L.C. - 2 - SERC,RF, Group Name ISO Standards Review Committee	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Erickson - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Jim Williams - Southwest Power Pool, Inc. (RTO) - 2 - MRO,SERC, Group Name SPP Standards Review Group	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

3. The standard drafting team is proposing an IFRO methodology that makes changes only when technically justified. This methodology should maintain a stable IFRO rather than implementing immaterial modifications. Do you agree with keeping IFROs stable over time, similar to CPS1, unless Interconnection Frequency Response significantly declines? If you do not agree, or if you agree but have comments or suggestions on the SDT’s recommendation, please provide your explanation and suggested language.

Summary Responses:

The SDT will develop the framework for the technical justification (including metrics) and the process for adjustments. Absent any change in any of the technical parameters, the IFRO will not increase unless there is degradation in actual response. The IFRO can increase based on larger (>10%) change in RLPC annually.

Thomas Foltz - AEP - 3,5

Answer	Yes
Document Name	
Comment	
Though AEP agrees in principal with the overall goal, we must reserve final judgement until more specifics are provided to support the reasoning.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Ginette Lacasse - Seattle City Light - 1,3,4,5,6 - WECC, Group Name Seattle City Light Ballot Body	
Answer	Yes

Document Name	
Comment	
No Comments	
Likes 0	
Dislikes 0	
Response	
Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
<i>We concur with keeping the IFRO methodology stable similar to CPS. At issue is the determination of a significant decline in Frequency Response – will some metric be established? In addition the technical justification of how a significant decline in Frequency Response indicates a challenge to an Interconnections protection in recovering from a N-2 event isn't well established.</i>	
Likes 0	
Dislikes 0	
Response	
The SDT agrees and will develop the framework for the technical justification (including metrics) and the process for adjustments. Absent any change in any of the technical parameters, the IFRO will not increase unless there is degradation in actual response. The IFRO can increase based on larger (>10%) change in RLPC annually.	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes

Document Name	
Comment	
<p>BPA understands that the IFRO is calculated based on a statistically derived starting frequency and CBR ratio. In general, BPA agrees that the IFRO need not change for minute statistical changes. However if there is a change to the RLPC that would raise the obligation, it makes sense that the change to IFRO happens quickly in order to protect against this event. It would be good to clarify the language to say that the IFRO stays the same year to year unless there is a significant change in Interconnection Frequency Response Performance, the RLPC, or statistical inputs to the IFRO.</p>	
Likes	0
Dislikes	0
Response	
<p>The SDT agrees and will develop the framework for the technical justification and the process for adjustments. Absent any change in any of the technical parameters, the IFRO will not increase unless there is degradation in actual response. The IFRO can increase based on larger (>10%) change in RLPC annually.</p>	
LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
<p>GCPD supports an IFRO methodology that makes changes only when technically justified, and keeps IFRO stable year over year. However, if IFRO is inadequate to respond to actual, or probable, events; IFRO should continue to change annually to provide reliable operation. While it is difficult to respond to this question because the interpretation of when "...Interconnection Frequency Response significantly declines" is nebulous, inadequate IFRO may be caused by factors other than a decline in frequency response such as discovering events that demand significantly more IFRO to respond to the size of the loss. (e.g. loss of large amounts of resources related to inverter performance related to distributed energy resources)</p>	

Likes	0
Dislikes	0
Response	
The SDT agrees and will develop the framework for the technical justification and the process for adjustments.	
Glenn Barry - Los Angeles Department of Water and Power - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Jim Williams - Southwest Power Pool, Inc. (RTO) - 2 - MRO,SERC, Group Name SPP Standards Review Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Erickson - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Albert DiCaprio - PJM Interconnection, L.L.C. - 2 - SERC,RF, Group Name ISO Standards Review Committee	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	
Document Name	
Comment	
Xcel Energy completely agrees that the changes must be technically justifiable. However, we feel any increase in an Interconnection's IFRO should be driven by actual degradation in an Interconnection's Frequency response and not by a technically unjustified change in the basis.	
Likes	0
Dislikes	0
Response	

The SDT agrees and will develop the framework for the technical justification and the process for adjustments. Absent any change in any of the technical parameters, the IFRO will not increase unless there is degradation in actual response. The IFRO can increase based on larger (>10%) change in RLPC annually.

4. The IFRO methodology proposed by the drafting team separates several variables from the annual modification of the IFRO, including the C to B ratio and delta frequency, and simplifies the calculation. These variables are being reviewed as part of the analysis process that will occur outside of the standard. Do you agree with the separation of the variables from the annual calculation? If you do not agree, or if you agree but have comments or suggestions on the SDT’s recommendation, please provide your explanation and suggested language.

Summary Responses:

Similar to the process used in BAL-001, formulas will be included in the Attachment of the standard; the variables will be maintained outside the Attachment of the standard.

APS provided the following comment: “In the **Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard** it states the RLPC for the Eastern Interconnection is “the largest event in the last 10 years.” But the **Proposed Resource Loss Protection Criteria** does not provide for this exception. Please clarify which is correct.” The SDT responds: “The largest event in the last 10 years” is being removed and replaced with the RLPC.

LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6

Answer	No
Document Name	
Comment	
If these values are used to determine compliance or to determine mandated values/limits, they should be part of the standard.	
Likes 0	
Dislikes 0	

Response

The formulas will be included in the Attachment of the standard; the variables will be maintained outside the Attachment of the standard. This is similar to the process used in BAL-001.

Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC

Answer	No
Document Name	
Comment	
<p>Until phase 2 of this SDT process can occur, BPA does not support changing the core way that IFRO is calculated. In phase 2, the entire methodology of IFRO could be called into question. Until those more thorough discussions happen, it does not make sense to change the IFRO methodology beyond what was suggested for the RLPC. The RLPC should be reviewed annually and IFRO calculated based on the RLPC. Movement towards a new RLPC should be implemented completely, but changes due to small changes in CBR ratio or starting frequency should not require changing the IFRO yearly.</p>	
Likes	0
Dislikes	0
Response	
<p>It is the scope of the project SAR to address this issue in Phase 1.</p>	
Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	No
Document Name	
Comment	
<p><i>These details are an essential part of the standard as they directly impact the determination of a BAs FRM.</i></p>	
Likes	0
Dislikes	0
Response	
<p>The formulas will be included in the Attachment of the standard; the variables will be maintained outside the Attachment of the standard. This is similar to the process used in BAL-001.</p>	

Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

We cannot support removing these variables (for the MDF calculation in particular) from Attachment A until we see where they will be moved, in terms of new documents, and under what venue this analysis will occur.

Likes 0	
---------	--

Dislikes 0	
------------	--

Response

The formulas will be included in the Attachment of the standard; the variables will be maintained outside the Attachment of the standard. This is similar to the process used in BAL-001.

Leonard Kula - Independent Electricity System Operator - 2

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

See comments

Likes 0	
---------	--

Dislikes 0	
------------	--

Response

Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6

Answer	Yes
Document Name	
Comment	
In the Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard it states the RLPC for the Eastern Interconnection is “the largest event in the last 10 years.” But the Proposed Resource Loss Protection Criteria does not provide for this exception. Please clarify which is correct.	
Likes 0	
Dislikes 0	
Response	
“The largest event in the last 10 years” is being removed and replaced with the RLPC.	
Ginette Lacasse - Seattle City Light - 1,3,4,5,6 - WECC, Group Name Seattle City Light Ballot Body	
Answer	Yes
Document Name	
Comment	
No Comments	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 3,5	
Answer	Yes

Document Name	
Comment	
AEP believes the current methodology could be improved, but simplification itself should not be the primary goal. Rather, the key to success would be to have a well thought-out and documented process.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT agrees.	
Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Sean Erickson - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jim Williams - Southwest Power Pool, Inc. (RTO) - 2 - MRO,SERC, Group Name SPP Standards Review Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glenn Barry - Los Angeles Department of Water and Power - 1,3,5,6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Albert DiCaprio - PJM Interconnection, L.L.C. - 2 - SERC,RF, Group Name ISO Standards Review Committee	
Answer	
Document Name	
Comment	
See response to Question 7 and also see attached comments	
Likes 0	
Dislikes 0	
Response	
Please see responses to Question 7.	

5. With the modification to the RLPC and IFRO methodologies, the Eastern Interconnection IFRO will experience an approximate 28 percent decrease, and Hydro Quebec will experience an approximate 17 percent increase. The standard drafting team recommends limiting the IFRO changes by no more than 10 percent annually and implementing percentage of change over the time period necessary to achieve the appropriate IFRO levels. Once the transition is complete, modifications to IFRO would not be limited. Do you agree with this staged implementation of the methodology?

Summary Responses:

Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented in a single step.

Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

There's no justification for establishing a lower FRO for an Interconnection whose MSSC1 and MSSC2 clearly indicate that more FRO is needed to protect that Interconnection from the currently defined event. If during this phase in an event occurs that the Interconnection can't respond to is NERC willing to accept the responsibility for requiring less when clearly more was needed?

Likes	0
-------	---

Dislikes	0
----------	---

Response

Thank you for your comment. Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented in a single step.

Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC

Answer	No
---------------	----

Document Name	
Comment	
BPA thinks that the staged approach makes sense if the IFRO is lowering. If the IFRO is increasing then the change should happen immediately to support reliability.	
Likes	0
Dislikes	0
Response	
Thank you for your comment. Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented in a single step.	
Sean Erickson - Western Area Power Administration - 1,6	
Answer	No
Document Name	
Comment	
<p>The Purpose as written for BAL-003 is: To require sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value. To provide consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.</p> <p>The question as written would suggest, "<i>except when the delta is large</i>".</p> <p>If the intent is to limit the decrease in the East as a conservative precaution, then YES, WAPA does agree, but to allow less than required when the new methodology dictates a need for more violates the purpose of the standard.</p>	
Likes	0
Dislikes	0

Response

Thank you for your comment. Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented in a single step.

LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6

Answer No

Document Name

Comment

The concept of this question is wrong on several levels. First, if the new methodology is technically sound - which remains to be shown - then there is every reason to enforce the new IFRO values at the next annual change because the Eastern Interconnection does not need the present amount for reliable operation, and Hydro Quebec has a reliability risk because it is short.

Next, what is the technical justification for limiting change to 10% rather than 5%, 7%, 15%, etc.? Does it provide 80% of the benefit at 20% of the cost or achieve some other merit that warrants the risk that is accepted by using a value that is recognized as inadequate?

Proposing such a limit calls both the present and proposed methodology into question because one or the other, or perhaps both, must be wrong. Perhaps separate Interconnection methods provide more reliable results, or at least result in less surplus being required by an Interconnection. If Hydro Quebec is reliable today, then there is no need to force them to increase IFRO 17% just to treat all Interconnections the same. Conversely, if they are 17% short, they should correct the deficiency at the next scheduled IFRO change. The real issue is whether the proposed methodology is a better measure to identify necessary IFRO than the old methodology. If so, why?

Likes 0

Dislikes 0

Response

The SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented immediately.

Glenn Barry - Los Angeles Department of Water and Power - 1,3,5,6

Answer	Yes
Document Name	
Comment	
<p>How was 10% chosen, and is there a basis for that value. It is conservative approach to have staged implementation to large reductions in IFRO. However with IFRO being a reliability measure intended to prevent UFLS what is justification for restricting increases in IFRO greater than 10%?</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your comment. Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented in a single step.</p>	
Thomas Foltz - AEP - 3,5	
Answer	Yes
Document Name	
Comment	
<p>AEP prefers a gradual change of IFRO in response to real changes in the BPS, and we believe the proposed 10 percent is a reasonable annual limit.</p>	
Likes	0
Dislikes	0
Response	

Thank you for your comment. The SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented immediately.

Ginette Lacasse - Seattle City Light - 1,3,4,5,6 - WECC, Group Name Seattle City Light Ballot Body

Answer Yes

Document Name

Comment

No Comments

Likes 0

Dislikes 0

Response

Leonard Kula - Independent Electricity System Operator - 2

Answer Yes

Document Name

Comment

As part of the eastern interconnection, we agree with the phased-in approach. This is more impactful with the increasing IFRO but fair to apply the phasing-in in both directions.

Likes 0

Dislikes 0

Response

Thank you for your comment. Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented in a single step.

Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Jim Williams - Southwest Power Pool, Inc. (RTO) - 2 - MRO,SERC, Group Name SPP Standards Review Group	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC

Answer	
Document Name	
Comment	

We do not support the 2 MSSC approach and thus have no comment.	
Likes	0
Dislikes	0
Response	
Albert DiCaprio - PJM Interconnection, L.L.C. - 2 - SERC,RF, Group Name ISO Standards Review Committee	
Answer	
Document Name	
Comment	
See response to Question 7 and also see attached comments	
Likes	0
Dislikes	0
Response	
Please see responses in Question 7.	

6. The drafting team is proposing to move items not related to entity compliance from BAL-003-1.1, Attachment A to the *Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard* document. The SAR recommended such changes to Attachment A. Do you agree that the changes to these documents address the SAR recommendations?

Summary Responses:

Similar to the process used in BAL-001, the formulas will be included in the Attachment of the standard; the variables will be maintained outside the Attachment of the standard.

A more complete redline version of the ERO Procedure Document will be included as part of the formal posting and balloting process.

LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6

Answer	No
Document Name	
Comment	
Requirement 1 requires a BA's FRM to be calculated in accordance with Attachment A, and that its FRM be "...equal to or more negative than its Frequency Response Obligation (FRO)..." Hence, FRO is an obligation and should remain in the standard and subject to the standards drafting process. Keeping the calculations as part of the standard can occur without specifying who is responsible for completing such calculations, though.	
Likes 0	
Dislikes 0	

Response

The formulas will be included in the Attachment of the standard; the variables will be maintained outside the Attachment of the standard. This is similar to the process used in BAL-001.

Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC

Answer	No
---------------	----

Document Name	
Comment	
<p>Because the IFRO calculations are the basis for much of the current BAL-003 standard, the IFRO methodology should stay in Attachment A of the standard. Numbers that may change from year to year should move to the <i>Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard</i> document. However, the methodology and rules for determining and calculating IFRO should stay in the Attachment and not be changed unless it goes through a SAR process.</p>	
Likes	0
Dislikes	0
Response	
<p>The formulas will be included in the Attachment of the standard; the variables will be maintained outside the Attachment of the standard. This is similar to the process used in BAL-001.</p>	
<p>Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company</p>	
Answer	No
Document Name	
Comment	
<p>Requirement R1 requires that a “Balancing Authority that is not a member of a FRSG shall achieve an annual Frequency Response Measure (FRM) (as calculated and reported in accordance with Attachment A) that is equal to or more negative than its Frequency Response Obligation (FRO)...” Since the BA’s FRM must be equal to or more negative than its FRO, the FRO is a compliance obligation. Compliance obligations should be included in the language of the Standards and Requirements and be subject to the full Standards Drafting Process.</p> <p>LG&E/KU recommends that the IFRO and FRO calculations be set forth in Attachment A without reference to who is responsible for the administrative task of completing the calculations. A similar approach can be seen in BAL-001-2 Attachments 1 and 2 where the equations supporting the Requirements in the Standard are set forth. If the calculations are set forth in Attachment A, then the responsibility for the</p>	

administrative task of completing the calculations can be stated in the *Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard* document.

Likes 0

Dislikes 0

Response

The formulas will be included in the Attachment of the standard; the variables will be maintained outside the Attachment of the standard. This is similar to the process used in BAL-001.

Leonard Kula - Independent Electricity System Operator - 2

Answer Yes

Document Name

Comment

See comments

Likes 0

Dislikes 0

Response

Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6

Answer Yes

Document Name

Comment

Although AZPS agrees in concept to moving these items from Attachment A to the **Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard**, it would be helpful if the SDT would move this language to the procedure and amend the procedure in a proper draft form for proper review by industry. This would avoid errors such as:

- The current posted draft version containing references to itself (last sentence of page 8 “Detailed descriptions of the calculations used in Table 1 below are defined in the *Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard*.”).
- Page 4 under subtitle “Monthly”, the link cited is no longer valid.
- There are new items that are not redlined, which does not allow the reviewer to recognize what are new concepts.

Moving the **Timeline for Balancing Authority Frequency Response and Frequency Bias Setting Activities** from Attachment A to the **Procedure for ERO Support of Frequency Response and Frequency Bias Setting Standard** would be another recommended change since these dates and tasks have changed and have not always been adhered to.

To allow industry to properly review and evaluate the proposed document, we recommend, at a minimum, an accurate clean version be provided and possibly a redlined version if a meaningful approximation can be constructed.

Likes	0
Dislikes	0
Response	
A more complete redline version of the ERO Procedure Document will be included as part of the formal posting and balloting process.	
Ginette Lacasse - Seattle City Light - 1,3,4,5,6 - WECC, Group Name Seattle City Light Ballot Body	
Answer	Yes
Document Name	
Comment	
No Comments	

Likes	0
Dislikes	0
Response	
Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Acceptable to move non entity compliance (including non IFRO) to the "Procedure...." document.	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Thomas Foltz - AEP - 3,5	
Answer	Yes
Document Name	
Comment	
AEP agrees in principle with the concept. To be acceptable, the "Procedure" would need to have well-defined steps, boundaries to the use of engineering judgement, clear roles, clear responsibilities, and oversight.	
Likes	0

Dislikes 0	
Response	
Thank you for your support. A more complete redline version of the ERO Procedure Document will be included as part of the formal posting and balloting process.	
Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Erickson - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Jim Williams - Southwest Power Pool, Inc. (RTO) - 2 - MRO,SERC, Group Name SPP Standards Review Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glenn Barry - Los Angeles Department of Water and Power - 1,3,5,6	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Albert DiCaprio - PJM Interconnection, L.L.C. - 2 - SERC,RF, Group Name ISO Standards Review Committee	
Answer	
Document Name	
Comment	
See response to Question 7 and also see attached comments	
Likes 0	
Dislikes 0	
Response	
Please see responses in Question 7.	

7. Please provide any additional comments for the SDT to consider that you have not already provided on the Phase I modifications to BAL-003-1.1.

Summary Responses:

Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented in a single step.

Several commenters requested removal of the statement “The MSSC calculation is done in Real-time operations based on actual system configuration” in the *Proposed Resource Loss Protection Criteria*. While MSSC is updated based on actual system conditions, not all entities calculate MSSC in the manner stated. The SDT will address this in the next version.

Thomas Foltz - AEP - 3,5

Answer

Document Name

Comment

While we appreciate the drafting team’s need for input regarding their efforts, a 14 day turnaround time is not adequate opportunity for industry to provide thoughtful, meaningful feedback on the subject matter.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Ginette Lacasse - Seattle City Light - 1,3,4,5,6 - WECC, Group Name Seattle City Light Ballot Body

Answer	
Document Name	
Comment	
No Comments	
Likes 0	
Dislikes 0	
Response	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	
Document Name	
Comment	
<p>The document <i>Proposed Resource Loss Protection Criteria</i> states, “The MSSC calculation is done in Real-time operations based on actual system configuration.” This statement is not universally accurate and should be removed.</p>	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT will address this in the next version.	
Jim Williams - Southwest Power Pool, Inc. (RTO) - 2 - MRO,SERC, Group Name SPP Standards Review Group	
Answer	

Document Name	
Comment	
<p>The SPP Standards Review Group (“SSRG”) requests the Standards Drafting Team revise the definition of “Balancing Contingency Event” to include parameters that will expand the single contingencies recognized as a Most Severe Single Contingency (“MSSC”). For example, non-traditional criteria such as a fuel supply with a single point of failure, Joint Owned Units, and multiple units with a common bus should be included as a BCE, so that this additional granularity may be recognized by the BA as a MSSC.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your comment. Revising the definition of Balancing Contingency Event is outside the scope of this project.</p>	
<p>Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC</p>	
Answer	
Document Name	
Comment	
<p>To reiterate, BPA is in support of replacing the RLPC so that it is consistent across all interconnections and that the RLPC should be either the largest credible N-2 resource loss event or the sum of the two largest MSSC’s in an interconnection. BPA supports only changing the IFRO if the RLPC changes, there is a substantial decrease in interconnection performance, or there are statistically significant change in the statistical inputs to the IFRO like the CBR ratio, Starting Frequency, etc.</p> <p>Aside from adjusting the RLPC, BPA thinks no changes should be made to the core IFRO methodology until Phase 2 of this SAR and that the methodology for the IFRO should be documented in Attachment A of the BAL-003 standard. The IFRO It serves as the basis for the current standard and the core methodology should not change until further discussions are had in the drafting process.</p>	
Likes	0

Dislikes 0	
Response	
Thank you for your comments. Based on comments received, the SDT will be recommending that a decrease to the IFRO will be stepped-in to allow evaluation, and an increase to the IFRO will be implemented in a single step.	
Sean Erickson - Western Area Power Administration - 1,6	
Answer	
Document Name	
Comment	
thank you	
Likes 0	
Dislikes 0	
Response	
LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	
Document Name	
Comment	
The "Proposed Resource Loss Protection Criteria" states, "The MSSC calculation is done in Real-time operations based on actual system configuration." While MSSC is updated based on actual system conditions, not all entities calculate MSSC in the manner stated. Please modify or remove this statement.	
Likes 0	
Dislikes 0	

Response

Thank you for your comment. The SDT will address this in the next version.

Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

IFRO calculation description is somewhat confusing. The last sentence in the first paragraph says:

“A maximum delta frequency (MDF) is calculated by adjusting a starting frequency for each Interconnection by the following: “

The above sentence is implying that the starting frequency is adjusted by the items which follow up. Is the intent of the sentence is to say that MDF calculation depends upon the follow up items?

I do not see how the follow up items adjust the starting frequency?

Also, it is not clear how the starting frequency is chosen in Table 1. Please clarify.

Also it would help to clarify the basis of CLR values.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT will address this in the next version.

Albert DiCaprio - PJM Interconnection, L.L.C. - 2 - SERC,RF, Group Name ISO Standards Review Committee

Answer

Document Name

[Bal-003 \(IRC Standards Review Committee without ERCOT\).docx](#)

Comment

Comment 1:

The drafting team is trying to replicate the process used for CPS1. The performance level for CPS1 is based on a parameter called epsilon 1 (e1). The BAL-001 standard was designed such that if frequency performance of the grid degraded, NERC would work with the NERC OC and its subcommittees to identify a new e1 to tighten performance.

In the nearly 20 years of existence, there never has been a need to tighten the BAL-001 and only one case where an Interconnection went through the process to increase their e1.

Under the current version of the BAL-003 standard, NERC has to annually file a detailed analysis and suggest changes to the obligations. Interestingly, the math for the analysis suggests that since the “B value” in the East has improved, its obligation needs to go up. Additionally, there was no “off ramp” in the standard for the East’s 4500MW contingency that was the largest in 10 years.

The drafting team was hoping remove the hardcoding in the BAL-003 attachment and set up a process similar to BAL-001 whereby a reasonable target obligation for an Interconnection would only change it if:

- Performance drops below a base year by 10%.
- A new larger credible contingency is identified in an Interconnection.
- For cases like ERCOT where they use interruptible load as a resource, to adjust if the amount of contracted load changes.

Comment 2:

- The proposed process is flexible enough to allow the ERO to calculate the mandated values for BAL-003 BUT this process should remain as part of the official Attachment to the Standard (and not be made a Guideline). I propose this because of concerns with how “adjustments” are made. It appears that adjustments come from a small group of people who could be impacted by one or two regions thus those adjustments should be open to the public. For example, there is an adjustment for load (i.e. Credit for Load) value for load that is shed above the minimum UFLS. For the east the UFLS point itself is raised because of the local UFLS of Florida, whereas others are getting credit for this load shedding. This matter should be discussed by the Industry and not simply “include” in a calculation.

- Terry’s point about the new process being a good step forward is correct. I do believe that the process can be further enhanced if the proposed SDT changes strictly followed their own approach as opposed to having “off-ramps” for changes that indicated more than just marginal changes over a year. And if this approach were to follow a strict simple formula, all of the all too many references to “except for the EI” would be eliminated and replaced with a defined reliability obligation. As it is today the proposal fails to recognize that the EI frequency performance is in many ways better than other interconnection’s performance. This issue should be discussed in open as part of the formal process or even better as part of an ongoing informal process.
- Terry’s point about the lack of change over the years also points to the fact that the process should continue to be part of the standard (if the system is stable then sudden changes to the Process should be rare and openly discussed) and any changes should be subject to Industry discussion vis-à-vis a SAR.
- Terry’s point about the use of the two Most Severe
- The Procedure language is itself too casual and should be made more direct. The comments in this draft will hopefully add to that clarity.

{C}o {C}What is BETA?

{C}o {C}M-4 Point C is a Section heading not a value

{C}o {C}Are variables “Points” or “Values”

{C}o {C}Who reports the Most Severe Single Contingency (from section “Changes in Resource Loss Protection” in the ADJUSTMENTS TO INTERCONNECTION FREQUENCY BIA OBLIGATION Guideline

{C}§ {C}The RC who has all of the data but does not necessarily have all of the detailed “changes”

{C}§ {C}The GO who has responsibility for generating resource capacity

{C}§ {C}The TOP who has information on transmission related impacts

{C}§ {C}The PC who has forecast information

{C}o {C}Is the reporting of the largest resources an Annual calculation of a “daily” calculation (It seems from the text that this may be done each day as he resources change)

In short, the proposal has good intentions but it stills needs work in how it is written and how it can be made even better. (see attached relined document)

Comment 3:

The RLPC should be what it is and then it should be parenthetically noted that it happened to be the largest category C event... We should not lock ourselves into using only the largest category C event for the preceding 10 years – it varies too much.

The Credit for Load is not applicable to firm load shed. ERCOT receives the credit because ERCOT has a robust competitive market for demand response to provide response in less than 30 cycles to arrest frequency decay. Any applicable entity that has a demand response program designed to arrest large frequency deviation that responds before UFLS trigger is eligible for credit. Not assigning the LR credit would cause to IFRO requirement to almost more than double while trying to protect against the same RCC or RLPC.

Likes 0

Dislikes 0

Response

Thank you for your comments and suggestions. The SDT will be taking your comments and suggestions into consideration as the project continues to develop.

Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2

Answer

Document Name

Comment

No response.	
Likes 0	
Dislikes 0	
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	
Document Name	
Comment	
We support the changes as they represent a more stream-lined standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	