

Comment Report

Project Name: 2023-01 EOP-004 IBR Event Reporting | Draft 1
Comment Period Start Date: 7/28/2023
Comment Period End Date: 9/11/2023
Associated Ballots: 2023-01 EOP-004 IBR Event Reporting EOP-004-5 IN 1 ST
2023-01 EOP-004 IBR Event Reporting Implementation Plan IN 1 OT

There were 68 sets of responses, including comments from approximately 188 different people from approximately 112 companies representing 10 of the Industry Segments as shown in the table on the following pages.

Questions

- 1. Do you agree with the language proposed in EOP-004-5 Attachment 1? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.**
- 2. The Standard Drafting Team (SDT) proposes a two (2) year implementation plan for EOP-004-5. If you think an alternate timeframe is needed, please propose an alternate implementation plan with detailed explanation.**
- 3. The SDT believes the language of EOP-004-5 addresses the issues outlined in the SAR in a cost effective manner. Do you agree? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification.**
- 4. Provide any additional comments on the standard and technical rationale for the SDT to consider, if desired.**

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
WEC Energy Group, Inc.	Christine Kane	3		WEC Energy Group	Christine Kane	WEC Energy Group	3	RF
					Matthew Beilfuss	WEC Energy Group, Inc.	4	RF
					Clarice Zellmer	WEC Energy Group, Inc.	5	RF
					David Boeshaar	WEC Energy Group, Inc.	6	RF
Austin Energy	Imane Mrini	6		Austin Energy	Imane Mrini	Austin Energy	6	Texas RE
					Michael Dillard	Austin Energy	5	Texas RE
					Lovita Griffin	Austin Energy	3	Texas RE
					Tony Hua	Austin Energy	4	Texas RE
					Thomas Standifur	Austin Energy	1	Texas RE
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,RF,SERC,Texas RE,WECC	ACES Collaborators	Bob Soloman	Hoosier Energy Electric Cooperative	1	RF
					Jolly Hayden	East Texas Electric Cooperative, Inc.	NA - Not Applicable	Texas RE
					Scott Brame	North Carolina Electric Membership Corporation	1,3,4,5	SERC
					Scott Brame	North Carolina Electric Membership Corporation	1,3,4,5	SERC
					Scott Brame	North Carolina Electric Membership Corporation	1,3,4,5	SERC

					Ryan Strom	Buckeye Power, Inc.	4	RF
MRO	Jou Yang	1,2,3,4,5,6	MRO	MRO NSRF	Bobbi Welch	Midcontinent ISO, Inc.	2	MRO
					Chris Bills	City of Independence, Power and Light Department	5	MRO
					Fred Meyer	Algonquin Power Co.	3	MRO
					Christopher Bills	City of Independence Power & Light	3,5	MRO
					Larry Heckert	Alliant Energy Corporation Services, Inc.	4	MRO
					Marc Gomez	Southwestern Power Administration	1	MRO
					Matthew Harward	Southwest Power Pool, Inc. (RTO)	2	MRO
					Bryan Sherrow	Board of Public Utilities	1	MRO
					Terry Harbour	Berkshire Hathaway Energy - MidAmerican Energy Co.	1	MRO
					Terry Harbour	MidAmerican Energy Company	1,3	MRO
					Jamison Cawley	Nebraska Public Power District	1,3,5	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Shonda McCain	Omaha Public Power District	6	MRO
					George E Brown	Pattern Operators LP	5	MRO
					George Brown	Acciona Energy USA	5	MRO

					Jaimin Patel	Saskatchewan Power Cooperation	1	MRO
					Kimberly Bentley	Western Area Power Administration	1,6	MRO
					Jay Sethi	Manitoba Hydro	1,3,5,6	MRO
					Michael Ayotte	ITC Holdings	1	MRO
Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
Electric Reliability Council of Texas, Inc.	Kennedy Meier	2		ISO/RTO Council Standards Review Committee (SRC)	Bobbi Welch	Midcontinent ISO, Inc.	2	NA - Not Applicable
					Darcy O'Connell	California ISO	2	WECC
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Harishkumar Subramani Vijay Kumar	Independent Electricity System Operator	2	NPCC
					John Pearson	ISO New England, Inc.	2	NPCC
					Kennedy Meier	Electric Reliability Council of Texas, Inc.	2	Texas RE
					Matthew Harward	Southwest Power Pool, Inc. (RTO)	2	NA - Not Applicable
					Thomas Foster	PJM Interconnection, L.L.C.	2	RF
FirstEnergy - FirstEnergy Corporation	Mark Garza	4		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF

					Mark Garza	FirstEnergy-FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
Northern California Power Agency	Marty Hostler	4		NCPA	Michael Whitney	Northern California Power Agency	3	WECC
					Scott Tomashefsky	Northern California Power Agency	4	WECC
					Dennis Sismaet	Northern California Power Agency	6	WECC
					Marty	Northern California Power Agen	5	WECC
Northern California Power Agency	Michael Whitney	3		NCPA	Scott Tomashefsky	Northern California Power Agency	4	WECC
					Marty Hostler	Northern California Power Agency	5,6	WECC
					Marty Hostler	Northern California Power Agency	5,6	WECC
Southern Company - Southern Company Services, Inc.	Pamela Frazier	1,3,5,6	MRO,RF,SERC,Texas RE,WECC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Jim Howell, Jr.	Southern Company - Southern Company Generation	5	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
Northeast Power	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC RSC	Gerry Dunbar	Northeast Power	10	NPCC

Coordinating
Council

	Coordinating Council		
Alain Mukama	Hydro One Networks, Inc.	1	NPCC
Deidre Altobell	Con Edison	1	NPCC
Jeffrey Streifling	NB Power Corporation	1	NPCC
Michele Tondalo	United Illuminating Co.	1	NPCC
Stephanie Ullah-Mazzuca	Orange and Rockland	1	NPCC
Michael Ridolfino	Central Hudson Gas & Electric Corp.	1	NPCC
Randy Buswell	Vermont Electric Power Company	1	NPCC
James Grant	NYISO	2	NPCC
John Pearson	ISO New England, Inc.	2	NPCC
Harishkumar Subramani Vijay Kumar	Independent Electricity System Operator	2	NPCC
Randy MacDonald	New Brunswick Power Corporation	2	NPCC
Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
David Burke	Orange and Rockland	3	NPCC
Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
Salvatore Spagnolo	New York Power Authority	1	NPCC
Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
David Kwan	Ontario Power Generation	4	NPCC

					Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	1	NPCC
					Glen Smith	Entergy Services	4	NPCC
					Sean Cavote	PSEG	4	NPCC
					Jason Chandler	Con Edison	5	NPCC
					Tracy MacNicoll	Utility Services	5	NPCC
					Shivaz Chopra	New York Power Authority	6	NPCC
					Vijay Puran	New York State Department of Public Service	6	NPCC
					ALAN ADAMSON	New York State Reliability Council	10	NPCC
					David Kiguel	Independent	7	NPCC
					Joel Charlebois	AESI	7	NPCC
					Joshua London	Eversource Energy	1	NPCC
Ryan Strom	Ryan Strom		RF	Buckeye Power Group	Carl Spaetzel	Buckeye Power, Inc.	3	RF
					Jason Proconiar	Buckeye Power, Inc.	4	RF
					Kevin Zemanek	Buckeye Power, Inc.	5	RF
Dominion - Dominion Resources, Inc.	Sean Bodkin	6		Dominion	Connie Lowe	Dominion - Dominion Resources, Inc.	3	NA - Not Applicable
					Lou Oberski	Dominion - Dominion Resources, Inc.	5	NA - Not Applicable
					Larry Nash	Dominion - Dominion Virginia Power	1	NA - Not Applicable
					Rachel Snead	Dominion - Dominion Resources, Inc.	5	NA - Not Applicable
Southwest Power Pool, Inc. (RTO)	Shannon Mickens	2	MRO,SPP RE,WECC	SPP RTO	Shannon Mickens	Southwest Power Pool Inc.	2	MRO
					Ashley Stringer	Southwest Power Pool Inc.	2	MRO

					Debbie Currie	Southwest Power Pool Inc	2	MRO
					Brian Strickland	Southwest Power Pool Inc.	2	MRO
					Derek Hawkins	Southwest Power Pool Inc.	2	MRO
					Mia Wilson	Southwest Power Pool Inc.	2	MRO
					Margaret Quispe	Southwest Power Pool Inc.	2	MRO
					Randy Cleland	Southwest Power Pool Inc.	2	MRO
					Melissa Rinehart	Southwest Power Pool Inc.	2	MRO
					Matt Harward	Southwest Power Pool Inc.	2	MRO
					Scott Aclin	Southwest Power Pool Inc.	2	MRO
Stephen Whaite	Stephen Whaite			ReliabilityFirst Ballot Body Member and Proxies	Lindsey Mannion	ReliabilityFirst	10	RF
					Stephen Whaite	ReliabilityFirst	10	RF
Tim Kelley	Tim Kelley		WECC	SMUD and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC
					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC
					Nicole Goi	Sacramento Municipal Utility District	5	WECC
					Kevin Smith	Balancing Authority of Northern California	1	WECC
Associated Electric Cooperative, Inc.	Todd Bennett	3		AECI	Michael Bax	Central Electric Power Cooperative (Missouri)	1	SERC

Adam Weber	Central Electric Power Cooperative (Missouri)	3	SERC
Stephen Pogue	M and A Electric Power Cooperative	3	SERC
William Price	M and A Electric Power Cooperative	1	SERC
Peter Dawson	Sho-Me Power Electric Cooperative	1	SERC
Mark Ramsey	N.W. Electric Power Cooperative, Inc.	1	NPCC
John Stickley	NW Electric Power Cooperative, Inc.	3	SERC
Tony Gott	KAMO Electric Cooperative	3	SERC
Micah Breedlove	KAMO Electric Cooperative	1	SERC
Kevin White	Northeast Missouri Electric Power Cooperative	1	SERC
Skyler Wiegmann	Northeast Missouri Electric Power Cooperative	3	SERC
Ryan Ziegler	Associated Electric Cooperative, Inc.	1	SERC
Brian Ackermann	Associated Electric Cooperative, Inc.	6	SERC
Brad Haralson	Associated Electric Cooperative, Inc.	5	SERC
Rene Free	Santee Cooper	1,3,5,6	SERC

Santee Cooper	Vicky Budreau		Santee Cooper	Christie Pope	Santee Cooper	1,3,5,6	SERC
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1. Do you agree with the language proposed in EOP-004-5 Attachment 1? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

Thomas Foltz - AEP - 5

Answer No

Document Name

Comment

While AEP supports the scope as proposed in the draft SAR and the efforts of the Standards Drafting Team, we have a number of concerns and questions regarding the proposed inclusion of STATCOMs and SVCs by their mention in Footnote 1.

Because there is no current NERC Glossary definition of IBR, the 2023-01 SDT has taken upon itself to develop a definition specific to EOP-004, which we believe incorporates more device types than necessary. Our understanding is that the Project 2020-06 SDT has been asked to develop a number of IBR-related NERC glossary definitions, so EOP-004 should be written in a way that would accommodate these future definitions (as well as align with the “dispersed power producing resources” referenced in the current definition of Bulk Electric System). As a result, we request that Footnote 1 be removed from the current draft.

With regards to purpose of the SAR, we see no technical justification for the inclusion of STATCOM and SVC devices, nor does the Technical Rationale document itself provide any insight. AEP requests that the SDT provide why they believe these devices should be included.

The governing SAR simply advocates the reporting of “generation loss events of applicable sizes” and includes no mention of the proposed inclusion of reactive devices. As a result, we believe the proposed inclusion of STATCOMs and SVCs is outside the scope of the SAR.

STATCOMs and SVCs are reactive resources, and as such, could not be triggered by a megawatt threshold. In addition, it is not clear exactly how they are to be included in the final reporting. Neither the revised standard nor the Technical Rationale provide the insight needed to make this determination.

Likes 0

Dislikes 0

Response

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer No

Document Name

Comment

The improper use of the undefined terms “IBR generation loss” in Attachment 2 “transmission” and “subtransmission” in Attachment 2 footnote 1 defeats the fundamental stated purpose of the SAR and inappropriately transfers enforcement responsibility on to industry.

NERC, not industry has the authority to impose penalties and fines on NERC registered entities. Non-registered entities have no enforcement mechanism to compel them to report in a timely or accurate manner until they are NERC registered and subject to the same NERC Reliability Standards and penalties as NERC registered industry.

The replacement of “IBR generation loss” with “NERC registered Generation Owner” and “GO-IBR” could be an appropriate generation scope. This will eliminate the need for the undefined terms “transmission” and “subtransmission” in Attachment 2 in footnote 1.

Likes 0

Dislikes 0

Response

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer

No

Document Name

Comment

AEPC has signed on to ACES comments:

It is our opinion that the language of Footnote 1 of the IBR generation loss event type in Attachment 1 is overly broad. As written, IBR generation loss event types are inclusive of IBR resources connected to a “subtransmission” system via a single point of connection. We interpret this to mean distribution connected IBRs. By including distribution connected IBRs, this standard places the onus of collecting IBR generation data on the BA with little to no recourse for the BA to collect said data. In short, the BA will potentially be forced to collect telemetered data from nonregistered entities to comply with the proposed revisions to this standard. We believe that NERC Reliability Standards should only apply to NERC registered entities.

We recommend updating the IBR generation loss criteria to only include those resources that will be included in the new GO-IBR registration currently being developed by NERC.

As for the “Loss of DC Tie Line” event type, it is our opinion that the development of the BES inclusion criteria was intentional and well-reasoned. By including any and all DC Tie Lines “between two separate asynchronous systems, loaded at > 500 MW”, it may be interpreted as circumventing the BES definition. It is our recommendation that the criteria for the “Loss of DC Tie Line” event type be updated to only be applicable to BES elements and/or aligning the event type with the new GO-IBR registration currently being developed by NERC.

Likes 0

Dislikes 0

Response

Jou Yang - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

No

Document Name

Comment

The MRO NSRF understands NERC has concerns about the changing nature of generation. However, NERC standards are zero-defect laws and must operate within the proper defined NERC framework. The use of the undefined terms “IBR generation loss” in Attachment 2 “transmission” and “subtransmission” in Attachment 2 footnote 1 need to be corrected.

- The SDT should at the very minimum include in Attachment 1 under “generation loss” or GO-IBR, “This threshold is not meant to report losses due to weather patterns, lack of wind, change in irradiance, fuel unavailability, curtailment, or a temporary reduction in active power output due to expected operation of the IBR unit(s).”
- The SDT or NERC should define Inverter-Based Resource (IBR) in the NERC Glossary of Terms. Using undefined terms that are subject to interpretation is not an acceptable practice in a ‘zero-defect’ enforcement environment. For example, on March 28, 2023, NERC released a recap of technical session’s Inverter-Based Resource Panel. In this panel’s Quick Reference Guide (https://www.nerc.com/pa/Documents/IBR_Quick%20Reference%20Guide.pdf) a definition is outlined for IBR as follows:
 - In most cases, inverter-based generating resources refer to Type 3 and Type 4 wind power plants and solar photovoltaic (PV) resources. Battery energy storage is also considered an inverter-based resource. Many transmission-connected reactive devices, such as STATCOMs and SVCs, are also inverter-based.
 - Suggest adding that Type 1 and Type 2 induction generators are not IBR units. Similarly, HVDC circuits also interface with the ac network through converters. Inverter-based resources are being interconnected at the bulk power system (BPS) level as well as at the distribution level; however, this reference guide focuses specifically on BPS-connected inverter-based resource efforts.
- Clarify that only NERC registered entities are required to report. This can be done by replacing the term “IBR generation loss” with “GO-IBR” and deleting footnote 1. These clarifications correspond with the current NERC project to correctly register additional IBR units. It limits the scope to NERC units and removes the improper inclusion of non-BES “transmission” and “subtransmission”.
- The GO-IBR level (20 MW or more connected between 60 and 99kV) is an appropriate national floor. If BA’s want to identify additional generation resources for reporting they can do so in the IRO-010 data specification.
 - NERC’s own documentation states the GO-IBR registration effort would “still result in approximately 97.5% of IBRs becoming subject to NERC Registration and compliance with applicable Reliability Standards”.
 - **Reference** www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/August%20Work%20Plan%20Filing%20Update.pdf
 - Changing “IBR generation loss” to “GO-IBR” should meet the reliability need for the grid. If NERC needs more, it should demonstrate why the GO-IBR designation is not sufficient.
- Alternately, the SDT could write directly into the standard what was stated on the NERC EOP-004 SDT webinar that “The proposed revised language should specify that Applicable Entities are to report based off of telemetry and/or data that they are already receiving pursuant to other NERC standards/requirements (TOP-003 and IRO-010 perhaps), and are not obligated to obtain data from non-NERC-jurisdictional entities.”
- The MRO NSRF notes that the footnote definition of IBR generation loss includes “high voltage direct current (HVDC) transmission”. The MRO NSRF suggests removing this from the footnote. This will avoid blurring the line between transmission and generation.

Likes 0

Dislikes 0

Response

Julie Hall - Entergy - 6, Group Name Entergy

Answer	No
Document Name	
Comment	
<p>While the SDT agreed that the 500 MW criteria should be based on aggregate IBR output instead of the number of individual units lost due to time constraints of submitting the EOP Event Reporting Form, the 500 MW criteria alone does not account for instances where a single IBR interconnection may itself exceed 500 MW. It is our understanding that this new IBR reporting criteria is being proposed due to past large-scale disturbances impacting multiple IBRs, and as such the loss of a single IBR (although perhaps large in size) would not merit event reporting. Our proposed language requiring event reporting only with the loss of 500 MW from two or more IBRs prevents the BA from being required to submit an event report for the loss of a single IBR and prevents NERC event analysis from investigating an event they may not be interested in analyzing.</p>	
Likes	0
Dislikes	0
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
<p>Comments: Footnote 1 is not appropriate for a Reliability Standard. Inverter Based Generation should be a defined term in the Glossary of Terms. It can then be used as a common definition for any other standard development.</p> <p>The measurement methodology in Attachement 1 for “IBR Generation Loss” is very specific. There is no such language for a Reportable Balancing Contingency Event in BAL-002. RBCE has a Glossary definition. This type of language belongs in a definition of a “Reportable IBR Generation Loss,” not as a footnote.</p>	
Likes	0
Dislikes	0
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	No
Document Name	
Comment	
<p>Footnote 1 is not appropriate for a Reliability Standard. Inverter Based Generation should be a defined term in the Glossary of Terms. It can then be used as a common definition for any other standard development.</p>	

The measurement methodology in Attachment 1 for "IBR Generation Loss" is very specific. There is no such language for a Reportable Balancing Contingency Event in BAL-002. RBCE has a Glossary definition. This type of language belongs in a definition of a "Reportable IBR Generation Loss," not as a footnote.

Likes 0

Dislikes 0

Response

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO

Answer

No

Document Name

Comment

Manitoba Hydro thanks the drafting team for their proposal but does not agree with some of the details included in EOP-004 Attachment 1. The definition of an Inverter Based Resource (IBR) has been included in a foot note. Manitoba Hydro suggests that this be brought directly in to the "threshold for reporting" table to make the scope clear. Alternatively, instead of a foot note, a standard NERC term such as "GO-IBR" could be used. Manitoba Hydro suggests that the definitions of IBR explicitly exclude HVDC transmission and that "Loss of DC tie line" be removed as an event type. No other part of EOP-004 includes reporting on transmission losses. The SAR does not include HVDC transmission, and none of the IBR event reports relate to HVDC losses. The following is proposed as an updated definition for "IBR Generation":

For the purposes of EOP-004-5, an IBR is a generation resource consisting of one or more IBR unit(s) that connect to the transmission or subtransmission system via a single point of connection. An IBR unit is a primary energy source containing an individual inverter device, individual converter device, or a grouping of multiple inverters/converters. IBR units include solar photovoltaic, Type 3 and Type 4 wind, battery energy storage. HVDC transmission connected at greater than 100 kV is not included as an IBR.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1

Answer

No

Document Name

Comment

Tri-State Generation and Transmission supports the MRO NSRF comments.

Likes 0

Dislikes 0

Response	
Ben Hammer - Ben Hammer On Behalf of: Ben Hammer, Western Area Power Administration, 6, 1; - Western Area Power Administration - 1	
Answer	No
Document Name	
Comment	
<p>Improper use of the undefined terms “IBR generation loss” in Attachment 2 “transmission” and “subtransmission” in Attachment 2 footnote 1 defeats the SAR purpose to enable better responses and improved generation fleet performance. It also transfers enforcement responsibility on to industry. NERC, nor industry has the authority to impose zero-defect penalties and fines on non-NERC entities. Non-registered entities have no enforcement mechanism to compel them to report in a timely or accurate manner.</p> <p>It is recommended to replace “IBR generation loss” with “NERC registered IBR GO” and “GO-IBR” as the appropriate generation scope for improved EOP-004 generation loss reporting. This will eliminate the need for the undefined terms “transmission” and “subtransmission” in Attachment 2 in footnote 1. The better and accurate generation loss reporting issue isn’t related to the local load serving distribution system which is improperly included by the terms “transmission” and “subtransmission”.</p>	
Likes 0	
Dislikes 0	
Response	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	No
Document Name	
Comment	
<p>AECI supports all revised language within Attachment 1 except for the EOP-004 standard specific defined terms for "inverter based resource (IBR)" and "IBR unit". Currently there are at a minimum of 8 active NERC projects under development to address various IBR reliability issues, multiple projects contain inconsistent standard specific defined terms for IBR and IBR unit. NERC should coordinate with industry to develop BES glossary terms for IBR and IBR unit and apply the terms to all applicable standards.</p>	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	

Comment

BC Hydro appreciates the drafting team’s efforts and the opportunity to comment.

The Footnote 1 on Page 10 of 13 of EOP-004-5 Draft 1 states that the Inverter Based Resource (IBR) units, in addition to the active power resources, also includes HVDC systems and dynamic reactive devices such as static synchronous compensators (STATCOM) and Static VAR Compensators (SVC).

BC Hydro suggests that IBRs that do not generate active power would not be subject to EOP-004-5 reporting, and recommends that the drafting team revises the wording in Attachment 1 to that effect.

Footnote 1 also references “transmission and subtransmission” terminology, which is not defined, as well as a qualifier for an IBR to be connected “via a single point of connection”.

BC Hydro suggest revising the wording to reference BES generation as a defined term. The first sentence in Footnote 1 can be revised to “For the purposes of EOP-004-5, an IBR is a generation resource consisting of one or more IBR unit(s) that connect to the BES or non-BES Transmission system”.

Likes 0

Dislikes 0

Response**Jeffrey Streifling - NB Power Corporation - 1**

Answer

No

Document Name

Comment

The language is unclear.

Footnote 1 in attachment 1 is counterintuitive. "IBR" can in general refer to both transmission and distribution connected generation. Suggest referring to "Transmission-connected IBR generation loss" in the Attachment 1 table instead of just "IBR generation loss", and defining that term in footnote 1 instead.

DC tie lines between interconnections behave much like AC generation within the interconnection from a load flow perspective. The load threshold for reporting the loss of a DC tie line should be aligned with that for reporting the loss of AC generation, or the difference should be justified.

Likes 0

Dislikes 0

Response**Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter**

Answer

No

Document Name

Comment

FirstEnergySupports EEI's comments which state:

1. Footnote 1 contains a definition for IBRs for use solely in EOP-004. EEI does not agree that definitions should be contained in footnotes because they can be missed. Definitions should be in the body of the Reliability Standard.
2. EEI does not support the proposed IBR reporting criteria contained in Footnote 1. We are of the opinion that IBR reporting should be tied to the GO-IBR registration criteria, currently under development by NERC.
3. EEI does not agree that IBR resources that fall below the proposed GO-IBR registration criteria should be included in the IBR Threshold for reporting.
4. EEI recognizes that the 500MW reporting threshold for IBRs was selected to align with the ERO Event Analysis Process, Version 4.0; however, we are concerned that this threshold may be too low resulting in excessive and unnecessary reporting of IBR events. If there is a NERC document that has analyzed IBR events and determined that the 500MW threshold is an appropriate threshold, this report should be shared with the industry. However, if no analysis has been done to support this threshold, the SDT should develop a technical white paper that analyzes IBR events and defines a proposed threshold that is risk based and considers IBR loss levels that would have a meaningful impact on BPS reliability.
5. The IBR reporting threshold should state that IBR interruptions that are caused by a fault on its inverter, or its ac terminal equipment are not reportable events. (See ERO Event Analysis Process)
6. EEI does not agree that BAs should be the Entity solely held responsible for reporting IBR losses. GO-IBR entities whose resources mis-operate should share in the responsibility of reporting aberrant operation of their resources.

Likes 0

Dislikes 0

Response

Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group

Answer

No

Document Name

Comment

WEC Energy Group supports EEI comments.

Likes 0

Dislikes 0

Response

Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF**Answer** No**Document Name****Comment**

PPL NERC Registered Affiliates support the comments submitted by EEI with the following additional notes:

- 1) {C}We do not agree that “IBR” should be defined within Footnote 1 or within the text of the Standard. “Add, Modify or Retire a Glossary Term” is marked on the SAR for this project. Defining terms should occur through that process for the sake of consistency and clarity.
- 2) {C}We do not agree to BAs should be the Entity solely held responsible for reporting IBR losses. IBR-owning entities should be registered as GOs and share in the responsibility of reporting aberrant operation of their resources when resources mis-operate.

Likes 0

Dislikes 0

Response**Mike Magruder - Avista - Avista Corporation - 1****Answer** No**Document Name****Comment**

Footnote 1 is not appropriate for a Reliability Standard. Inverter Based Generation should be a defined term in the Glossary of Terms. It can then be used as a common definition for any other standard development.

The measurement methodology in Attachment 1 for “IBR Generation Loss” is very specific. There is no such language for a Reportable Balancing Contingency Event in BAL-002. RBCE has a Glossary definition. This type of language belongs in a definition of a “Reportable IBR Generation Loss,” not as a footnote.

Likes 0

Dislikes 0

Response**Lovita Griffin - Austin Energy - 3****Answer** No**Document Name****Comment**

Footnote 1 contains a definition for the purpose of EOP-004-5 of Inverter Based Resource (IBR) units. Austin Energy does not agree that a definition should be contained in a footnote and suggest that definitions be in the body of the Reliability Standard and the NERC glossary.

AE supports the opinion that IBR reporting should be tied to the GO-IBR registration criteria, currently under development by NERC.

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion

Answer No

Document Name

Comment

This language creates a conflict with the DOE-417 form and creates an unnecessary administrative burden on entities to now file different forms to FERC and NERC in contradiction to the language of Attachment 1 stating that DOE-417 can be used in lieu of Attachment 1.

Likes 0

Dislikes 0

Response

Imane Mrini - Austin Energy - 6, Group Name Austin Energy

Answer No

Document Name

Comment

Footnote 1 contains a definition for the purpose of EOP-004-5 of Inverter Based Resource (IBR) units. Austin Energy does not agree that a definition should be contained in a footnote and suggest that definitions be in the body of the Reliability Standard and the NERC glossary.

AE supports the opinion that IBR reporting should be tied to the GO-IBR registration criteria, currently under development by NERC.

Likes 0

Dislikes 0

Response

Bobbi Welch - Midcontinent ISO, Inc. - 2

Answer No

Document Name	
Comment	
<p>MISO acknowledges the value of identifying the unplanned loss of Inverter-Based Resource (IBR) generation in a timely manner so the event analysis process can be initiated to collect disturbance recorder data specific to the event while the data is still available.</p> <p>MISO offers the following comments:</p> <p>1. The proposed 500 MW reporting threshold is too low as it could be triggered by the loss of a single, large IBR facility for which the BA must currently plan to be able to operate for the loss of, since 500 MW is well below many BAs' current largest source contingency.</p> <p>Recommendation: To address this, MISO suggests the 24-hour reporting threshold for IBR generation losses align with the existing generation loss reporting threshold of 2,000 MW for the Eastern Interconnection.</p> <p>To the extent it would be beneficial in determining an appropriate reporting threshold for reach Interconnection, MISO also supports NERC conducting a field test under Section 6.0 of the NERC Standard Process Manual.</p> <p>2. The proposed 30-second loss threshold may not provide an accurate means for identifying the unplanned loss of IBR generation events as it may not be adequate to account for future IBR ramp rates going forward. As IBRs continue to proliferate and individual IBR installations become larger in scale, typical IBR ramp amplitudes may exceed 500 MW in 30 seconds, resulting in the reporting of false events. Likewise, reporting should not be required for output reductions tied to change in weather patterns, lack of wind, change in irradiance, fuel unavailability, curtailment or a temporary reduction in active power output due to <i>expected</i> operation of the IBR unit(s) or planned testing.</p> <p>Recommendation: To address this, the word "unplanned" should be added to the descriptions for "Event Type" and "Threshold for Reporting" as illustrated below to indicate that reporting is not required for output reductions tied to change in weather patterns, lack of wind, change in irradiance, fuel unavailability, curtailment or a temporary reduction in active power output due to <i>expected</i> operation of the IBR unit(s) such as ramping or planned resource testing:</p> <ul style="list-style-type: none"> · Event Type - Unplanned IBR generation loss · Threshold for Reporting - Total unplanned, aggregated generation loss of &ge; 500 MW from inverter-based resource(s) occurring within a 30 second period. <p>3. MISO recommends that EOP-004-5 Attachment 1, footnote 1 be revised to clarify that IBRs connected to the distribution system are not in scope.</p>	
Likes	0
Dislikes	0

Response	
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Gordon Joncic - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
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Answer	No
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Document Name	
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Comment	
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CenterPoint Energy Houston Electric, LLC (CEHE) supports the comments as submitted by the Edison Electric Institute.	
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Likes	0
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Dislikes 0

Response

Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen

Answer No

Document Name

Comment

Suggested Clarifications for IBR Generation Loss:

- 1) Suggest clarifying the first sentence to include the concept that the total aggregated generation loss should be from both loss of and reduction of IBR generation. Consider "Total aggregated generation loss/reduction of..."
- 2) Suggest clarifying the first sentence to include the intended concept of the IBR source loss is following a **Contingency**. We believe using the NERC defined term **Contingency** is appropriate to be more specific and bound the system disturbance concept presented in the Technical Rationale paper. Consider "...of ≥ 500 MW from inverter-based resource(s) (IBR) occurring within a 30 second period following a **Contingency**."
- 3) Suggest clarifying the second sentence that the Telemetry data is not intended to be interpreted to mean net load in an attempt to account for behind the meter generation. Consider "IBR generation loss shall be calculated using Telemetry data from IBR generators by subtracting the lowest aggregated IBR generation output observed during a 30 second period from the pre-disturbance aggregated IBR generation output."

Suggested Clarifications for Loss of DC Tie Line

- 4) Suggest clarifying which entity needs to report on the loss of a DC tie greater than 500 MW, the source or sink entity? Suggest using the Source entity.

Suggested Content Changes:

- 5) Suggest performing the calculation at 30 seconds after the system disturbance instead of lowest aggregated IBR generation output observed during a 30 second period. The rationale for this is:
 - a. Many IBR have controls that allow fault ride through by temporarily reducing real power production and increasing reactive power production (not momentary cessation) to operate through low voltage conditions. Once post disturbance voltage recovers the original real and reactive power orders are restored. It would seem obtaining "the lowest aggregated IBR generation output" while in this state would capture a transient value, and is not as valuable, nor consistent from one measured event to the next, until after this fault recovery control behavior is complete. We do not believe this behavior is intended to be part of the calculation because this is the intended control operation and does not contribute to the IBR source loss concern that is intended to be monitored.
 - b. As worded now it is not clear that this is intended to be a coincident calculation or non-coincident calculation over the 30 second time frame. If intended to be coincident it adds additional complexity to the data acquisition and ability to time synchronize it.
 - c. Simplification of the calculation in the time frame required is desirable. It seems to be an effort of precision that may not translate to better accuracy for the intended reporting requirement.

Likes 0

Dislikes 0

Response

Marty Hostler - Northern California Power Agency - 4, Group Name NCPA

Answer No

Document Name

Comment

1. NCPA supports numerous comments by others related to the usefulness of report 500MW at above since most IBRs interconnected at a single point are less than 500MW. If they mean within a BA's footprint than they need to say that.

Likes 0

Dislikes 0

Response

Richard Vendetti - NextEra Energy - 5

Answer No

Document Name

Comment

A line fault on a radial transmission line with a sufficient number of solar sites and/or storage batteries would result in the consequential loss of >500MW of IBR resources. With the proposed standard language, such consequential loss of generation would have to be reported even though it is not an "abnormal response" to faults or a case of "systemic reliability risks posed by inverter-based resources."

FPL may potentially install up to 600MW of solar resources on radial lines within the next 5 years. We recommend for the language to specify non-consequential loss, to explicitly exclude events where the IBR generation is lost due to line relay action on a radial transmission line, or increase the threshold above 600MW.

Likes 0

Dislikes 0

Response

Michael Whitney - Northern California Power Agency - 3, Group Name NCPA

Answer No

Document Name

Comment

NCPA supports numerous comments by others related to the usefulness of report 500MW at above since most IBRs interconnected at a single point are less than 500MW. If they mean within a BA's footprint than they need to say that.

Likes 0

Dislikes 0

Response

Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster

Answer No

Document Name

Comment

Evergy supports and incorporates the response of the Edison Electric Institute (EEI) to question #1.

Likes 0

Dislikes 0

Response

Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Procuniar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group

Answer No

Document Name

Comment

Buckeye supports the comments made by ACES:

It is our opinion that the language of Footnote 1 of the IBR generation loss event type in Attachment 1 is overly broad. As written, IBR generation loss event types are inclusive of IBR resources connected to a “subtransmission” system via a single point of connection. We interpret this to mean distribution connected IBRs. By including distribution connected IBRs, this standard places the onus of collecting IBR generation data on the BA with little to no recourse for the BA to collect said data. In short, the BA will potentially be forced to collect telemetered data from non-registered entities to comply with the proposed revisions to this standard. We believe that NERC Reliability Standards should only apply to NERC registered entities. We recommend updating the IBR generation loss criteria to only include those resources that will be included in the new GO-IBR registration currently being developed by NERC.

As for the “Loss of DC Tie Line” event type, it is our opinion that the development of the BES inclusion criteria was intentional and well-reasoned. By including any and all DC Tie Lines “between two separate asynchronous systems, loaded at > 500 MW”, it may be interpreted as circumventing the BES definition. It is our recommendation that the criteria for the “Loss of DC Tie Line” event type be updated to only be applicable to BES elements and/or aligning the event type with the new GO-IBR registration currently being developed by NERC.

Likes 0

Dislikes 0

Response

Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company

Answer No

Document Name

Comment

Southern Company supports the EEI comments that do not support the changes made to Attachment 1.

Likes 0

Dislikes 0

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer No

Document Name

Comment

EEI does not support the changes made to Attachment 1 for the following reasons:

1. Footnote 1 contains a definition for IBRs for use solely in EOP-004. EEI does not agree that definitions should be contained in footnotes because they can be missed. Definitions should be in the body of the Reliability Standard.
2. EEI does not support the proposed IBR reporting criteria contained in Footnote 1. We are of the opinion that IBR reporting should be tied to the GO-IBR registration criteria, currently under development by NERC.
3. EEI does not agree that IBR resources that fall below the proposed GO-IBR registration criteria should be included in the IBR Threshold for reporting.
4. EEI recognizes that the 500MW reporting threshold for IBRs was selected to align with the ERO Event Analysis Process, Version 4.0; however, we are concerned that this threshold may be too low resulting in excessive and unnecessary reporting of IBR events. If there is a NERC document that has analyzed IBR events and determined that the 500MW threshold is an appropriate threshold, this report should be shared with the industry. However, if no analysis has been done to support this threshold, the SDT should develop a technical white paper that analyzes IBR events and defines a proposed threshold that is risk based and considers IBR loss levels that would have a meaningful impact on BPS reliability.
5. The IBR reporting threshold should state that IBR interruptions that are caused by a fault on its inverter, or its ac terminal equipment are not reportable events. (See ERO Event Analysis Process)
6. EEI does not agree that BAs should be the Entity solely held responsible for reporting IBR losses. GO-IBR entities whose resources mis-operate should share in the responsibility of reporting aberrant operation of their resources.

Likes 0

Dislikes 0

Response

Ruchi Shah - AES - AES Corporation - 5

Answer No

Document Name	
Comment	
The 500MW threshold is lower than for other types of disturbances, and less than half of the threshold for the lowest region's reporting standard. AES CE is concerned this could lead to increased scrutiny placed on GO/GOPs, including additional PRC-002 notifications for Disturbance and Fault Monitoring equipment. This does not account for locations where more than 500MW of IBR generation is connected to a singular interconnection point.	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Minnesota Power supports MRO's NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	
Exelon supports the comments submitted by the EEI.	
Likes 0	
Dislikes 0	
Response	
Kinte Whitehead - Exelon - 3	
Answer	No
Document Name	

Comment

Exelon supports the comments submitted by the EEI.

Likes 0

Dislikes 0

Response

Dennis Sismaet - Northern California Power Agency - 6

Answer No

Document Name

Comment

1. NCPA supports numerous comments by others related to the usefulness of report 500MW at above since most IBRs interconnected at a single point are less than 500MW. If they mean within a BA's footprint then they need to say that.

Likes 0

Dislikes 0

Response

David Jendras Sr - Ameren - Ameren Services - 3

Answer No

Document Name

Comment

Ameren supports EEI's comments on this project.

Likes 0

Dislikes 0

Response

Marcus Sabo - Marcus Sabo On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Marcus Sabo

Answer No

Document Name

Comment

ITC supports EEI's comments.

Likes 0

Dislikes 0

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer

No

Document Name

Comment

It is our opinion that the language of Footnote 1 of the IBR generation loss event type in Attachment 1 is overly broad. As written, IBR generation loss event types are inclusive of IBR resources connected to a “subtransmission” system via a single point of connection. We interpret this to mean distribution connected IBRs. By including distribution connected IBRs, this standard places the onus of collecting IBR generation data on the BA with little to no recourse for the BA to collect said data. In short, the BA will potentially be forced to collect telemetered data from non-registered entities to comply with the proposed revisions to this standard. We believe that NERC Reliability Standards should only apply to NERC registered entities.

We recommend updating the IBR generation loss criteria to only include those resources that will be included in the new GO-IBR registration currently being developed by NERC.

As for the “Loss of DC Tie Line” event type, it is our opinion that the development of the BES inclusion criteria was intentional and well-reasoned. By including any and all DC Tie Lines “between two separate asynchronous systems, loaded at > 500 MW”, it may be interpreted as circumventing the BES definition. It is our recommendation that the criteria for the “Loss of DC Tie Line” event type be updated to only be applicable to BES elements and/or aligning the event type with the new GO-IBR registration currently being developed by NERC.

Likes 0

Dislikes 0

Response

Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO

Answer

No

Document Name

Comment

SPP is concerned about the 500 MW threshold of "aggregate generation loss." As our comments stated before, this proposed number is too low. Furthermore, we are concerned about what is stated in the third bullet in Section 1 (Technical Rationale). We think the IBR generation loss threshold doesn't definitively support NERC's claim when using the three events per year across North America.

From our perspective, this data needs more data points to support their argument.

Furthermore, we are concerned that this proposed threshold will create more issues for NERCs concerning the IBR ride-through standard (PRC-024-3). At this point, the more IBRs connected to the system, the more the industry will see reliability issues and will need to make more reports. Additionally, NERC still has a concern about the IBR ride-through at this point.

For clarity, NERC has identified that PRC-024-3 is inadequate to address IBR ride-through and wants to develop a more performance-based standard to address that concern. Industry may need to solve that issue before tackling the one at hand. Without the performance of a resource via a system disturbance study, how can the appropriate reporting threshold be determined for that resource when lost?

Reducing the timing from one minute to thirty seconds (30) is also unreasonable. From our perspective, reports shouldn't be focused on "change in wind, cloud cover, irradiance, ramping due to curtailment, etc." NERC needs to research and determine where those losses differ from the aggregated generation loss and when reporting is warranted. In addition, the threshold will need to be higher to identify and mitigate that issue. In other words, the lower threshold and shorter time have the potential to capture non-events such as **changes in wind, cloud cover, irradiance, ramping due to curtailment, etc**, which will cause more reporting burden on the system operator.

Finally, consequential/non-consequential load could be a problem for the BA to identify the difference between the two. However, we anticipate that the drafting team will not revise the scope document to include the revision to Attachment 1 in reference to consequential/non-consequential load due to limitation to scope.

Likes 0

Dislikes 0

Response

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)

Answer

No

Document Name

Comment

The following members of the ISO/RTO Council (IRC) Standards Review Committee (SRC) join this response to question 1: ERCOT, PJM, MISO, NYISO, and SPP.

CAISO, IESO, and ISO-NE abstain from this response to question 1.

The SRC acknowledges the value and importance of identifying Inverter-Based Resource (IBR) performance failures so that the event analysis process can begin while as much event-specific data as possible is available. However, the SRC believes that the proposed 500 MW reporting threshold is too low for a 24-hour reporting requirement. Specifically, the reliability risk posed by a 500 MW loss of IBRs does not justify the resources required to validate that the loss is genuine and not simply a SCADA or ICCP failure and report the event within 24 hours. While SRC members would seek to develop tools to better facilitate identification of these lower-impact events, validating a potential loss could require additional real-time analysis or communication that could be overly burdensome if it needed to be performed within 24 hours during a situation where entity personnel resources are already taxed, such as during extreme or severe weather.

To address this issue, the SRC proposes a twofold solution. First, revise the 24-hour reporting threshold for IBR losses to align with the existing generation loss reporting thresholds (1400 MW for the ERCOT Interconnection and 2000 MW for the other Interconnections). Second, create a new Requirement R3 that is modeled after Requirement R2 but imposes a 72-hour reporting timeline for smaller IBR loss events ≥ 500 MW that don't meet the 24-hour reporting threshold. The SRC recognizes that the scope of the SAR may need to be revised in order to implement this

recommendation, but believes that this approach is a better method of accomplishing the reliability objective of this project. These revisions, if properly coordinated with the data recording and retention requirements proposed in draft PRC-028-1 in Project No. 2021-04, would still allow adequate time to request and collect data for analysis of IBR loss events.

Additionally, the SRC appreciates the discussion in the Technical Rationale that indicates that reporting is not required for output reductions tied to changes in weather patterns, lack of wind, changes in irradiance, fuel unavailability, curtailment, or a temporary reduction in active power output due to expected operation of the IBR unit(s). However, the SRC believes that the standard should be revised to more clearly reflect this intent. The SRC proposes that the word “unplanned” be added to the descriptions for “Event Type” and “Threshold for Reporting” as illustrated below to indicate that reporting is not required for IBR generation losses that occur as a result of planned activities, such as ramping or resource testing, or anticipated behavior, such as IBR output fluctuations that result from changes in weather patterns:

Event Type - **Unplanned** IBR generation loss

Threshold for Reporting - Total **unplanned**, aggregated generation loss of \geq 500 MW from inverter-based resource(s) (IBR) occurring within a 30 second period.

The SRC is also concerned that the proposed 30-second loss threshold does not adequately account for future IBR ramp rates and therefore does not provide an accurate metric for identifying actual IBR loss events. As IBRs continue to proliferate and individual IBR installations grow larger, normal IBR ramp amplitudes may exceed 500 MW in 30 seconds, resulting in false event identifications under the thresholds proposed in the draft standard. The SRC recommends that the SDT consider what thresholds would allow for accurate event identification in regions where normal IBR down ramps routinely exceed 500 MW in 30 seconds. Given regional differences in IBR installations, the SRC recommends that the SDT consider an approach that will allow thresholds to be updated as ramp amplitudes change without relying on the standards drafting process. One approach would be to allow the Reliability Coordinator or Regional Entity to determine the appropriate threshold based on the area or region.

Finally, the SRC recommends that EOP-004-5 Attachment 1, footnote 1 be revised to clarify that IBRs connected to the distribution system are not in scope for this standard.

Likes 0

Dislikes 0

Response

Elizabeth Davis - Elizabeth Davis On Behalf of: Thomas Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis

Answer

No

Document Name

Comment

PJM supports the IRC SRC comments and in addition, requests a higher reporting threshold to account for single interconnection IBR facilities and/or projects that are already at or planned to be greater than 500 MWs at various locations. As currently proposed, an outage or reduction in output of a single large IBR facility would result in reporting obligations (by the Balancing Authority) for expected outages/reductions as designed by the resource owner. The communication of such losses would also be overly burdensome for the BA; and the requirement to report these losses should either be placed on the resource owner (GO) or addressed through the GADS submittal process for collecting derate data for single resource outages/derates.

Likes 0

Dislikes 0

Response

Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike

Answer No

Document Name

Comment

Tacoma Power supports MRO NSRF comments.

Likes 0

Dislikes 0

Response

Marcus Bortman - APS - Arizona Public Service Co. - 6

Answer No

Document Name

Comment

AZPS Share the concerns of EEI on Attachment 1 regarding the need for IBR reporting should be tied to GO-IBR registration criteria.

Likes 0

Dislikes 0

Response

Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Fong Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Wei Shao, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC

Answer No

Document Name

Comment

SMUD and BANC support the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer

Yes

Document Name

Comment

None.

Likes 0

Dislikes 0

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1

Answer

Yes

Document Name

Comment

In attachment 1 – Generation Loss: There seems to be a verb missing in the sentence. “Generation loss will be used to report Forced Outages not weather patterns or fuel supply unavailability for dispersed power producing resources”. A possible suggestion would be "Generation loss will be used to report Forced Outages not related to weather patterns or fuel supply unavailability for dispersed power producing resources."

Likes 0

Dislikes 0

Response

Junji Yamaguchi - Hydro-Quebec (HQ) - 5

Answer

Yes

Document Name

Comment

In attachment 1 – Generation Loss: There seems to be a verb missing in the sentence. “Generation loss will be **used to report Forced Outages not weather** patterns or fuel supply unavailability for dispersed power producing resources” A possible suggestion would be “Generation loss will be used to report Forced Outages **not related** to weather patterns or fuel supply unavailability for dispersed power producing resources.

Likes 0

Dislikes 0

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer

Yes

Document Name

Comment

OPG supports the NPCC RSC's comments.

Likes 0

Dislikes 0

Response

Harishkumar Subramani Vijay Kumar - Independent Electricity System Operator - 2

Answer

Yes

Document Name

Comment

We support NPCC RSC comments.

Likes 0

Dislikes 0

Response

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC

Answer

Yes

Document Name

Comment

In attachment 1 – Generation Loss: There seems to be a verb missing in the sentence. “Generation loss will be used to report Forced Outages not weather patterns or fuel supply unavailability for dispersed power producing resources” A possible suggestion would be"Generation loss will be used to report Forced Outages not related to weather patterns or fuel supply unavailability for dispersed power producing resources."

Likes 0

Dislikes 0

Response

Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez

Answer

Yes

Document Name

Comment

The threshold for reporting verbiage for IBR generation Loss could be improved by incorporating part of the footnotes, like Total Aggregate generation loss of ≥ 500 MW from inverter-based resource(s) (IBR) **connecting to the transmission or subtransmission system via a single point of interconnection**, occurring within a 30 second period.

Also, IBR generation loss shall be calculated using **valid** Telemetry data by subtracting the lowest aggregated IBR generation output observed during a 30 second period from the pre-disturbance aggregated IBR generation output.

As an alternative to these proposed verbiage changes, perhaps a defined term for IBR Generation Loss would work.

Likes 0

Dislikes 0

Response

Jeremy Lawson - Northern California Power Agency - 5

Answer

Yes

Document Name

Comment

NCPA supports numerous comments by others related to the usefulness of report 500MW at above since most IBRs interconnected at a single point are less than 500MW. If they mean within a BA's footprint than they need to say that.

Likes 0

Dislikes 0

Response

Alain Mukama - Hydro One Networks, Inc. - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Martin Sidor - NRG - NRG Energy, Inc. - 6

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Stephen Whaite - Stephen Whaite On Behalf of: Lindsey Mannion, ReliabilityFirst , 10; - Stephen Whaite, Group Name ReliabilityFirst Ballot Body Member and Proxies

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Claudine Bates - Black Hills Corporation - 6

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Micah Runner - Black Hills Corporation - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Sheila Suurmeier - Black Hills Corporation - 5

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Diana Torres - Imperial Irrigation District - 6

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Teresa Krabe - Lower Colorado River Authority - 5

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Vicky Budreau - Santee Cooper - 3, Group Name Santee Cooper

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF has no comments.

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

In Attachment 1, Texas RE recommends adding Reliability Coordinator to the 'Entity with Reporting Responsibility' column under Event Type IBR generation loss to capture wide area disturbances resulting >500 MW IBR generation loss. The objective of this standard revision is to modify the generation loss criteria to capture wide-spread IBR loss due to the impact of a system disturbance. As written, the 'responsible entity' requirement does not capture wide area disturbances which could lead to 500MW or greater IBR loss involving multiple BA areas and the individual BA may not meet the reporting MW threshold level. Adding the Reliability Coordinator would capture the wide are disturbances.

Likes 0

Dislikes 0

Response

2. The Standard Drafting Team (SDT) proposes a two (2) year implementation plan for EOP-004-5. If you think an alternate timeframe is needed, please propose an alternate implementation plan with detailed explanation.

Marcus Bortman - APS - Arizona Public Service Co. - 6

Answer No

Document Name

Comment

AZPS agrees with the 2 year implementation, but proposes that this implementation plan not be implemented until after the NERC GO-IBR registration changes go into effect.

Likes 0

Dislikes 0

Response

Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike

Answer No

Document Name

Comment

Tacoma Power supports MRO NSRF comments.

Likes 0

Dislikes 0

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer No

Document Name

Comment

It is our opinion that any standards modified to include IBRs should follow the GO-IBR registration deadlines to allow the industry time to adapt.

Likes 0

Dislikes 0

Response	
Marcus Sabo - Marcus Sabo On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Marcus Sabo	
Answer	No
Document Name	
Comment	
ITC supports EEI's comments.	
Likes	0
Dislikes	0
Response	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	No
Document Name	
Comment	
Ameren supports EEI's comments on this project'	
Likes	0
Dislikes	0
Response	
Dennis Sismaet - Northern California Power Agency - 6	
Answer	No
Document Name	
Comment	
The implementation plan needs to be consistent with the timing of GO-IBR registration requirements.	
Likes	0
Dislikes	0
Response	

Kinte Whitehead - Exelon - 3**Answer** No**Document Name****Comment**

Exelon supports the comments submitted by the EEI.

Likes 0

Dislikes 0

Response**Daniel Gacek - Exelon - 1****Answer** No**Document Name****Comment**

Exelon supports the comments submitted by the EEI.

Likes 0

Dislikes 0

Response**Hillary Creurer - Allete - Minnesota Power, Inc. - 1****Answer** No**Document Name****Comment**

Minnesota Power supports MRO's NSRF comments.

Likes 0

Dislikes 0

Response**Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable****Answer** No

Document Name	
Comment	
While EEI does not oppose the proposed two (2) year implementation plan, the proposed change should not be implemented until after the NERC GO-IBR registration changes go into effect. Given the unknowns surrounding this change we cannot fully support the proposed 2 year implementation plan at this time.	
Likes 0	
Dislikes 0	
Response	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	No
Document Name	
Comment	
Southern Company supports the EEI comments that do not oppose the implementation plan timeframe of 2 years but does not agree that changes should be implemented before the NERC GO-IBR registration changes go into effect.	
Likes 0	
Dislikes 0	
Response	
Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Procuniar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group	
Answer	No
Document Name	
Comment	
Buckeye supports the comments made by ACES: It is our opinion that any standards modified to include IBRs should follow the GO-IBR registration deadlines to allow the industry time to adapt.	
Likes 0	
Dislikes 0	
Response	

Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster

Answer No

Document Name

Comment

Evergy supports and incorporates the response of the Edison Electric Institute (EEI) to question #2.

Likes 0

Dislikes 0

Response

Michael Whitney - Northern California Power Agency - 3, Group Name NCPA

Answer No

Document Name

Comment

The implementation plan needs to be consistent with the timing of GO-IBR registration requirements.

Likes 0

Dislikes 0

Response

Marty Hostler - Northern California Power Agency - 4, Group Name NCPA

Answer No

Document Name

Comment

1. The implementation plan needs to be consistent with the timing of GO-IBR registration requirements.

Likes 0

Dislikes 0

Response

Gordon Joncic - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer	No
Document Name	
Comment	
CEHE supports the comments as submitted by the Edison Electric Institute.	
Likes 0	
Dislikes 0	
Response	
Imane Mrini - Austin Energy - 6, Group Name Austin Energy	
Answer	No
Document Name	
Comment	
Austin Energy supports the MRO NSRF comments. "The timeframe should allow for 24 months or the NERC GO-IBR registration deadlines, whichever is greater".	
Likes 0	
Dislikes 0	
Response	
Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
PPL NERC Registered Affiliates support the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	

Comment

WEC Energy Group supports EEI comments.

Likes 0

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter

Answer No

Document Name

Comment

FirstEnergySupports EEI's comments which state:

While EEI does not oppose the proposed two (2) year implementation plan, the proposed change should not be implemented until after the NERC GO-IBR registration changes go into effect. Given the unknowns surrounding this change we cannot fully support the proposed 2 year implementation plan at this time.

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer No

Document Name

Comment

In its General Consideration section, the Implementation Plan states that a the 24-month implementation period reflects, among other things, the entities' needs to revise data specifications and create additional SCADA tags.

As EOP-004-5 Draft 1's Applicability section does not include a Facilities subsection, BC Hydro requests that the drafting team clarify which of the IBR generation facilities (e.g. Bulk Electric System (BES) IBRs only, BES IBRs and BA-monitored non-BES IBRs, etc.) must be considered when determining the 500 MW reporting threshold in compliance with EOP-004-5. Beyond the reliability benefits from a comprehensive IBR generation monitoring by their respective BAs, the implementation of EOP-004-5 highly depends on the scope of facilities subject to regulatory compliance.

BC Hydro's understanding based on the August 15, 2023 Industry Webinar is that drafting team's intent was to maintain the existing IBR monitoring capabilities of applicable BAs. Please confirm if this understanding is accurate and if so document for clarity and future reference for compliance monitoring and enforcement purposes.

Likes 0

Dislikes 0

Response

Ben Hammer - Ben Hammer On Behalf of: Ben Hammer, Western Area Power Administration, 6, 1; - Western Area Power Administration - 1

Answer

No

Document Name

Comment

The timeframe should align with the NERC GO-IBR registration deadlines.

Likes 0

Dislikes 0

Response

Jou Yang - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

No

Document Name

Comment

The timeframe should allow for 24 months or the NERC GO-IBR registration deadlines, whichever is greater.

Likes 0

Dislikes 0

Response

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer

No

Document Name

Comment

AEPC has signed on to ACES comments:

It is our opinion that any standards modified to include IBRs should follow the GO-IBR registration deadlines to allow the industry time to adapt.

Likes 0

Dislikes 0

Response

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer

No

Document Name

Comment

The timeframe should align with the NERC GO-IBR registration, training and implementation deadlines.

Likes 0

Dislikes 0

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1

Answer

No

Document Name

Comment

Likes 0

Dislikes 0

Response

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC

Answer

No

Document Name

Comment

Likes 0

Dislikes 0

Response

Jeremy Lawson - Northern California Power Agency - 5

Answer Yes

Document Name

Comment

The implementation plan needs to be consistent with the timing of GO-IBR registration requirements.

Likes 0

Dislikes 0

Response

Elizabeth Davis - Elizabeth Davis On Behalf of: Thomas Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis

Answer Yes

Document Name

Comment

PJM supports the IRC SRC comments.

Likes 0

Dislikes 0

Response

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)

Answer Yes

Document Name

Comment

All members of the SRC join this response to question 2.

A two-year implementation plan is appropriate, as some Balancing Authorities will need to design, develop, test, and implement tools to monitor, identify, and alarm for unplanned loss of IBR generation events.

Likes 0

Dislikes 0

Response

Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen

Answer Yes

Document Name

Comment

ISO-NE supports the two (2) year implementation plan for EOP-004-5.

Likes 0

Dislikes 0

Response

Stephen Whaite - Stephen Whaite On Behalf of: Lindsey Mannion, ReliabilityFirst , 10; - Stephen Whaite, Group Name ReliabilityFirst Ballot Body Member and Proxies

Answer Yes

Document Name

Comment

Based on clarification from the NERC Senior Standards Developer, this is interpreted as a "Do you agree with the proposed implementation plan?" question.

Likes 0

Dislikes 0

Response

Bobbi Welch - Midcontinent ISO, Inc. - 2

Answer Yes

Document Name

Comment

A two (2) year implementation plan is appropriate as some Balancing Authorities will need to design, develop, test and implement tools to monitor, identify and alarm for unplanned loss of IBR generation events.

Likes 0

Dislikes 0

Response

Lovita Griffin - Austin Energy - 3**Answer** Yes**Document Name****Comment**

Austin Energy supports the MRO NSRF comments. "The timeframe should allow for 24 months or the NERC GO-IBR registration deadlines, whichever is greater".

Likes 0

Dislikes 0

Response**Mike Magruder - Avista - Avista Corporation - 1****Answer** Yes**Document Name****Comment**

Two years should be adequate.

Likes 0

Dislikes 0

Response**Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF****Answer** Yes**Document Name****Comment**

None.

Likes 0

Dislikes 0

Response**Robert Follini - Avista - Avista Corporation - 3****Answer** Yes

Document Name	
Comment	
Two years should be adequate.	
Likes 0	
Dislikes 0	
Response	
<p>Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Fong Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Wei Shao, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC</p>	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
<p>Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez</p>	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
<p>Vicky Budreau - Santee Cooper - 3, Group Name Santee Cooper</p>	
Answer	Yes
Document Name	
Comment	

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Teresa Krabe - Lower Colorado River Authority - 5

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Ruchi Shah - AES - AES Corporation - 5

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Harishkumar Subramani Vijay Kumar - Independent Electricity System Operator - 2**Answer** Yes**Document Name****Comment**

Likes 0

Dislikes 0

Response**Diana Torres - Imperial Irrigation District - 6****Answer** Yes**Document Name****Comment**

Likes 0

Dislikes 0

Response**Richard Vendetti - NextEra Energy - 5****Answer** Yes**Document Name****Comment**

Likes 0

Dislikes 0

Response**Sheila Suurmeier - Black Hills Corporation - 5****Answer** Yes**Document Name****Comment**

Likes 0

Dislikes 0

Response

Micah Runner - Black Hills Corporation - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Claudine Bates - Black Hills Corporation - 6

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Junji Yamaguchi - Hydro-Quebec (HQ) - 5

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0

Response

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO

Answer Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response

Alain Mukama - Hydro One Networks, Inc. - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF has no comments.

Likes 0

Dislikes 0

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer	
Document Name	
Comment	
	OPG supports the NPCC RSC's comments.
Likes 0	
Dislikes 0	
Response	

3. The SDT believes the language of EOP-004-5 addresses the issues outlined in the SAR in a cost effective manner. Do you agree? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification.

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer No

Document Name

Comment

NERC's continuing efforts to transfer NERC zero-defect standard enforcement responsibilities onto industry are not cost effective.

This language places enforcement responsibility and liability on the NERC registered entities without any authority or enforcement repercussions. NERC and the Regional organizations, through auditing and training, is the proper enforcement process for NERC standards. There are already multiple instances where the broader registered entities such as BAs, TOPs must assume the burden of missing data and information in order to maintain their own compliance.

To date, requests from the regional organizations for assistance have not produced results.

Likes 0

Dislikes 0

Response

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer No

Document Name

Comment

AEPC has signed on to ACES comments:

It is our opinion that potentially including non-NERC entities within the scope of the proposed revisions is not a cost-effective approach. We believe a more cost-effective approach would be to align changes with the upcoming GO-IBR function.

Likes 0

Dislikes 0

Response

Jou Yang - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer No

Document Name	
Comment	
Inclusion of ambiguous terms "IBR generation loss", transmission and subtransmission removes the BES bright line by potentially reaching into the distribution system.	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
This is an additional burden on a BA for reporting. While perhaps not a large burden to report, as part of a mandatory Reliability Standard, many administrative and training processes must updated and implemented.	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	No
Document Name	
Comment	
This is an additional burden on a BA for reporting. While perhaps not a large burden to report, as part of a mandatory Reliability Standard, many administrative and training processes must updated and implemented.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	

Answer	No
Document Name	
Comment	
The current inclusion of HVDC transmission and a 500MW threshold will result in over-reporting. The additional time and reports required would not meet the objective of the SAR cost effectively.	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Ben Hammer On Behalf of: Ben Hammer, Western Area Power Administration, 6, 1; - Western Area Power Administration - 1	
Answer	No
Document Name	
Comment	
Transferring NERC zero-defect standard enforcement responsibilities onto industry are not cost effective and duplicative. NERC is the proper enforcement entity.	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
The approach of calculating an aggregate loss of IBR generation only works for transmission-connected IBR generation, because such telemetering data is not consistently available for distribution-connected IBR generation. As a result, the present draft seems to simply ignore distribution-connected IBRs.	
It might be better to specify a reporting threshold for nonconsequential ACE deviation since that would cover both transmission- and distribution-connected IBRs.	
Likes 0	
Dislikes 0	
Response	

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter

Answer No

Document Name

Comment

See response to Q1. Without clarity on these items, FirstEnergy cannot determine if intent of Drafting Team can be met in a cost effective manner.

Likes 0

Dislikes 0

Response

Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF

Answer No

Document Name

Comment

PPL NERC Registered Affiliates support the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Mike Magruder - Avista - Avista Corporation - 1

Answer No

Document Name

Comment

This is an additional burden on a BA for reporting. While perhaps not a large burden to report, as part of a mandatory Reliability Standard, many administrative and training processes must updated and implemented.

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion

Answer	No
Document Name	
Comment	
It creates unnecessary administrative burdens.	
Likes 0	
Dislikes 0	
Response	
Marty Hostler - Northern California Power Agency - 4, Group Name NCPA	
Answer	No
Document Name	
Comment	
1. The SDT has not provided any cost estimate. Consequently, it is not possible to determine if this proposal is cost effective. Further, based on the 500MW threshold the proposal seems to not be a prudent use of dollars.	
Likes 0	
Dislikes 0	
Response	
Michael Whitney - Northern California Power Agency - 3, Group Name NCPA	
Answer	No
Document Name	
Comment	
The SDT has not provided any cost estimate. Consequently, it is not possible to determine if this proposal is cost effective. Further, based on the 500MW threshold the proposal seems to not be a prudent use of dollars.	
Likes 0	
Dislikes 0	
Response	
Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Procuniar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group	

Answer	No
Document Name	
Comment	
<p>Buckeye supports the comments made by ACES:</p> <p>It is our opinion that including all IBR's connected to a "subtransmission" system via a single point of interconnection is overly broad and therefore not a cost-effective approach. We believe a more cost-effective approach would be to adopt a risk-based strategy. We recommend updating the IBR generation loss criteria to only include those resources that will be included in the new "GO-IBR" registration recently approved by FERC.</p>	
Likes	0
Dislikes	0
Response	
Hillary Creurer - Allele - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
<p>Minnesota Power supports MRO's NSRF comments.</p>	
Likes	0
Dislikes	0
Response	
Dennis Sismaet - Northern California Power Agency - 6	
Answer	No
Document Name	
Comment	
<p>The SDT has not provided any cost estimate. Consequently, it is not possible to determine if this proposal is cost effective. Further, based on the 500MW threshold the purpose seems to not be a prudent use of dollars.</p>	
Likes	0
Dislikes	0
Response	

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	
It is our opinion that including all IBR's connected to a "subtransmission" system via a single point of interconnection is overly broad and therefore not a cost-effective approach. We believe a more cost-effective approach would be to align changes with the upcoming GO-IBR function.	
Likes 0	
Dislikes 0	
Response	
Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike	
Answer	No
Document Name	
Comment	
Tacoma Power supports MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation will not comment on cost-effectiveness.	
Likes 0	
Dislikes 0	
Response	

Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt

Answer Yes

Document Name

Comment

Black Hills Corporation will not comment on cost-effectiveness.

Likes 0

Dislikes 0

Response

Micah Runner - Black Hills Corporation - 1

Answer Yes

Document Name

Comment

Black Hills Corporation will not comment on cost-effectiveness.

Likes 0

Dislikes 0

Response

Sheila Suurmeier - Black Hills Corporation - 5

Answer Yes

Document Name

Comment

Black Hills Corporation will not comment on cost-effectiveness.

Likes 0

Dislikes 0

Response

Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen

Answer Yes

Document Name	
Comment	
No Additional Comments	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
All members of the SRC join this response to question 3.	
Likes 0	
Dislikes 0	
Response	
Marcus Bortman - APS - Arizona Public Service Co. - 6	
Answer	Yes
Document Name	
Comment	
AZPS agrees the language of EOP-004-5 address the issues outlined in the SAR in a cost effective manner.	
Likes 0	
Dislikes 0	
Response	
Jeremy Lawson - Northern California Power Agency - 5	
Answer	Yes
Document Name	
Comment	

The SDT has not provided any cost estimate. Consequently, it is not possible to determine if this proposal is cost effective. Further, based on the 500MW threshold the purposely seems to not be a prudent use of dollars.

Likes 0

Dislikes 0

Response

Alain Mukama - Hydro One Networks, Inc. - 1

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Julie Hall - Entergy - 6, Group Name Entergy

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Martin Sidor - NRG - NRG Energy, Inc. - 6

Answer Yes

Document Name

Comment	
Likes 0	
Dislikes 0	
Response	
Junji Yamaguchi - Hydro-Quebec (HQ) - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Stephen Whaite - Stephen Whaite On Behalf of: Lindsey Mannion, ReliabilityFirst , 10; - Stephen Whaite, Group Name ReliabilityFirst Ballot Body Member and Proxies	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response

Richard Vendetti - NextEra Energy - 5

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Diana Torres - Imperial Irrigation District - 6

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Ruchi Shah - AES - AES Corporation - 5

Answer Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kinte Whitehead - Exelon - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response

Vicky Budreau - Santee Cooper - 3, Group Name Santee Cooper

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Elizabeth Davis - Elizabeth Davis On Behalf of: Thomas Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Wei Shao, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
NA	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
Duke Energy's focus is to assure the effective and efficient reduction of risks to the reliability and security of the grid and will not provide comments on the cost effectiveness of the proposed changes.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	
Document Name	

Comment

WEC Energy Group has no comment.

Likes 0

Dislikes 0

Response**Lovita Griffin - Austin Energy - 3****Answer****Document Name****Comment**

No Comments

Likes 0

Dislikes 0

Response**Gordon Joncic - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE****Answer****Document Name****Comment**

CEHE abstains.

Likes 0

Dislikes 0

Response**Constantin Chitescu - Ontario Power Generation Inc. - 5****Answer****Document Name****Comment**

OPG supports the NPCC RSC's comments.

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF has no comments.

Likes 0

Dislikes 0

Response

Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company

Answer

Document Name

Comment

Southern Company has no comment on cost effectiveness.

Likes 0

Dislikes 0

Response

David Jendras Sr - Ameren - Ameren Services - 3

Answer

Document Name

Comment

Ameren has no comments on the cost effectiveness of the project.

Likes 0

Dislikes 0

Response

Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

Response

4. Provide any additional comments on the standard and technical rationale for the SDT to consider, if desired.

Marcus Bortman - APS - Arizona Public Service Co. - 6

Answer

Document Name

Comment

AZPS has no additional comments at this stage.

Likes 0

Dislikes 0

Response

Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike

Answer

Document Name

Comment

Tacoma Power supports MRO NSRF comments.

Likes 0

Dislikes 0

Response

Elizabeth Davis - Elizabeth Davis On Behalf of: Thomas Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis

Answer

Document Name

Comment

For Balancing Authority Areas (BAA) that cover large geographic areas, the standard should recognize that a loss (or decrease in output) of IBR generation in markedly different areas of a BAA may be unrelated. Under this type of scenario, the loss should be treated as two separate and distinct events instead of combining the two to reach the 500 MW threshold required for reporting, particularly since many IBR generation events are associated with low voltage, which is a local issue rather than an interconnection-wide issue. For example, a loss (or decrease in output) of IBR generation in Minnesota may be unrelated to a loss (or decrease in output) of IBR generation in Louisiana that coincidentally happens at the same time.

Likes 0

Dislikes 0

Response

Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO

Answer

Document Name

Comment

SPP believes that coordination is needed between this project and the PRC-024-3 project to ensure that the performance requirements from PRC-024-3 will define the event reporting requirements for EOP-004.

Additionally, the EOP-004-5 Standard drafting team may need to consider revising the scope to include the Institute of Electronic and Electrical Engineers (IEEE) 2800 Standard to help address performance and threshold issues. At this point, the standard doesn't mention the involvement of the IEEE document. Additionally, our organization is concerned that the industry still needs a solid understanding of NERCs expectations for the IEEE Standard and its potential impact on the involvement of Inverter-Based Resources (IBRs).

If the drafting team decides to move forward and supports these recommendations, NERC will need to create educational opportunities for the industry to get a better understanding of the IEEE 2800 document.

Likes 0

Dislikes 0

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer

Document Name

Comment

We at ACES believe that it is a worthwhile effort to update the NERC Reliability Standards to incorporate IBRs; however, we have concerns about the seemingly interchangeable usage of the IBR and DER terms. To date, there is no approved definition for either of these terms in the "Glossary of Terms Used in NERC Reliability Standards". This has the potential of each SDT attempting to define these terms to align with the standards they are writing. We recommend that NERC adopt a fixed definition for each term to be included in the "Glossary of Terms Used in NERC Reliability Standards". The proposed approach will limit any inconsistencies in application of standards and minimize confusion across the industry.

Thank you for the opportunity to comment.

Likes 0

Dislikes 0

Response

David Jendras Sr - Ameren - Ameren Services - 3

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE noticed that the language in Attachment 1, Footnote 1 includes HVDC transmission, and dynamic reactive devices such as static synchronous compensators (STATCOMs) and static VAR compensators (SVCs) as IBR units. Texas RE believes these should not be included as IBR units. HVDC transmission, STAMCOMs and SVCs are not generation resources. Their inclusion could therefore result in confusion regarding the scope of reporting requirements and other applicable obligations. Texas RE recommends revising the footnote language to the following:

“For the purposes of EOP-004-5, an IBR is a generation resource consisting of one or more IBR unit(s) that connect to the transmission or subtransmission system via a single point of connection. An IBR unit is a primary energy source containing an individual inverter device, individual converter device, or a grouping of multiple inverters/converters. IBR units include solar photovoltaic, Type 3 and Type 4 wind and battery energy storage. High voltage direct current (HVDC) transmission, and dynamic reactive devices such as static synchronous compensators (STATCOMs) and static VAR compensators (SVCs) are not included in the IBR generation loss reporting criteria.”

Additionally, Texas RE recommends the drafting team define the term “Inverter-based Resources” as it is being used increasingly in standard requirement language and a NERC Glossary definition would drive consistency.

Texas RE has the additional following comments:

- “Applicable entity” is referenced in C. Compliance, while “responsible entity” is referenced elsewhere in the standard.
- The VSL for R2 still references EOP-004-4. Texas RE recommends changing the language in the Standard to simply “EOP-004 Attachment 1” as that is what it is titled (and would remove the need to update as the Standard changes).
- In Attachment 1, for the IBR generation loss Event Type, it is unclear whether the 500 MW loss has to occur for the full 30 second time frame or within 30 seconds. This metric to determine reporting may not capture intermittent loss of IBRs (like cessation) as the 30 seconds may allow the output to return. The event still occurred.

- In Attachment 1, for the Loss of DC Tie Line Event Type, it is unclear whether it is intended to be the BA “sink” that reports the loss or both BAs

Likes 0

Dislikes 0

Response

Hillary Creurer - Allele - Minnesota Power, Inc. - 1

Answer

Document Name

Comment

Minnesota Power supports MRO's NSRF comments.

Likes 0

Dislikes 0

Response

Mike Gabriel - Greybeard Compliance Services, LLC - 5

Answer

Document Name

Comment

I support the NAGF comments submitted by Wayne Sipperly.

Likes 0

Dislikes 0

Response

Diana Torres - Imperial Irrigation District - 6

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company

Answer

Document Name

Comment

No additional comments.

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF requests clarifying and documenting that existing generation telemetry will be utilized by the Balancing Authority to determine reportable IBR events.

The NAGF notes that the SDT is proposing reporting events that are greater than or equal to 500 MW for IBR resources, which would have caused approximately 3.5 events per year. The NAGF is concerned that this reporting threshold may be lower than desired as the grid continues to move to a greater percentage of IBR generation. The proposed threshold may cause excessive reporting and reviews, especially if the reports are essentially pointing out the same thing each time. Recommend that the SDT consider a higher reporting threshold to become effective after two to three years, such as 750MWs. This would be especially appropriate if the evaluation of the events determines essentially the same cause of the events.

Likes 0

Dislikes 0

Response

Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Proconiar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group

Answer

Document Name

Comment

Buckeye supports the comments made by ACES:

We at ACES believe that it is a worthwhile effort to update the NERC Reliability Standards to incorporate IBRs; however, we have concerns about the seemingly interchangeable usage of the IBR and DER terms. To date, there is no approved definition for either of these terms in the "Glossary of Terms Used in NERC Reliability Standards". This has the potential of each SDT attempting to define these terms to align with the standards they are writing. We recommend that NERC adopt a fixed definition for each term to be included in the "Glossary of Terms Used in NERC Reliability Standards". The proposed approach will limit any inconsistencies in application of standards and minimize confusion across the industry.

Likes 0

Dislikes 0

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer

Document Name

Comment

Please provide additional clarification regarding:

- IBR Generation Loss (GO/GOP perspective vs TO/TOP perspective)
- Undefined terms "IBR generation loss"

Likes 0

Dislikes 0

Response

Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen

Answer

Document Name

Comment

The footnote for IBRs in Attachment 1 needs to be reviewed. It is unclear and looks to have been truncated or split between two different pages.

Likes 0

Dislikes 0

Response

Sheila Suurmeier - Black Hills Corporation - 5

Answer	
Document Name	
Comment	
Black Hills Corporation supports the additional comments of NAGF.	
Likes 0	
Dislikes 0	
Response	
Micah Runner - Black Hills Corporation - 1	
Answer	
Document Name	
Comment	
Black Hills Corporation supports the additional comments of NAGF.	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt	
Answer	
Document Name	
Comment	
Black Hills Corporation supports the additional comments of NAGF.	
Likes 0	
Dislikes 0	
Response	
Claudine Bates - Black Hills Corporation - 6	
Answer	
Document Name	

Comment

Black Hills Corporation supports the additional comments of NAGF.

Likes 0

Dislikes 0

Response**Bobbi Welch - Midcontinent ISO, Inc. - 2****Answer****Document Name****Comment**

For Balancing Authority Areas (BAA) that cover large geographic areas such as MISO, the standard should recognize that a loss (or decrease in output) of IBR generation in markedly different areas of a BAA may be unrelated. Under this type of scenario, there should be some means to treat the loss as two separate and distinct events as opposed to combining the two to reach the 500 MW threshold required for reporting, particularly since many IBR generation events are associated with low voltage which is a local versus an interconnection-wide issue. For example, a loss (or decrease in output) of IBR generation in Minnesota may be unrelated to a loss (or decrease in output) of IBR generation in Louisiana that coincidentally happens at the same time.

Likes 0

Dislikes 0

Response**Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion****Answer****Document Name****Comment**

This project should be coordinated with the Department of Energy to ensure that the DOE-417 and Attachment 1 remain coordinated.

Likes 0

Dislikes 0

Response**Lovita Griffin - Austin Energy - 3****Answer**

Document Name	
Comment	
No comments	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	
Document Name	
Comment	
WEC Energy Group supports the NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	

Please clarify language regarding applicability to BES and/or BPS connected devices (e.g., IBR's). Confirm the intent was to report loss of IBR's for which the BA has current visibility, not to differentiate the voltage level or real power output level on an individual IBR. Please verify the intent of the requirement was to report the transient to which either the BA or the system itself would have to respond.

Likes 0

Dislikes 0

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer

Document Name

Comment

Proposal to change the reporting timeline on some of those events with 1- or 6-hour reporting timelines.

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer

Document Name

Comment

The Technical Rationale states that the 500 MW threshold is not meant to trigger reporting of active power output reduction due to weather patterns, fuel availability, expected operation of the IBR unit(s), etc.

BC Hydro recommends that these exemptions from reporting be included within the Standard rather than its accompanying Technical Rationale documentation.

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

The proposed changes to EOP-004-5 Attachment 1 are not in alignment with the proposed DOE-417 form as posted in the Federal Register on August 30, 2023 (OMB No.:1901-0288). The proposed DOE-417 form reflects a slightly different criteria for reporting the loss of IBR and does not reflect reporting for loss of a DC tie line. It's unclear when the proposed changes to the DOE-417 form would become effective.

Likes 0

Dislikes 0

Response

Ben Hammer - Ben Hammer On Behalf of: Ben Hammer, Western Area Power Administration, 6, 1; - Western Area Power Administration - 1

Answer

Document Name

Comment

In addition to better language and registering the applicable generators, the NERC SDT should consider closing a potential gap on Generator Owner / Operator reporting.

- The standard as written assumes that the “BA” has or was given appropriate data on the current generating status and MW output of all the applicable “plant(s)” that sum to 500 MW or more. With the increased number of small generators, the EOP-004 standard should consider adding a requirement for the NERC registered IBR Generator Owner / Operator (GO / GOP) to provide the BA a “sustained MW lost” within 24 hours.
- The SDT will need to review the Odessa events to determine what is a proper “Event” or “Sustained MW lost” for Responsible Entities to report to the BA.
- Non-NERC distribution level plants are excluded by the Federal Power Act Section 215.
- The SDT should then extend the BA reporting from 24 hours to 48 hours due to the increased complexity at the BA level to ultimately determine the total MW lost.

NERC should consider better ways to achieve its reliability objectives versus attempting to write around the NERC Bulk Electric System definitions.

- Industry and NERC conservatively identified the 100 kV and greater electric system as a conservative level of “transmission” that can transport meaningful electric power across state and regional boundaries. Voltage classes below 100 kV are too small and high impedance electrically to achieve effective bulk power transport, rather they are local load serving and state jurisdictional. As such, NERC should continue to respect the BES definition for transmission and subtransmission.
- If generation below 100 kV levels is of concern, NERC should seek to appropriately register them as NERC entities allowing NERC standards to work as intended.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1

Answer	
Document Name	
Comment	
NA	
Likes 0	
Dislikes 0	
Response	
Jou Yang - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	
Document Name	
Comment	
<ul style="list-style-type: none"> • Regarding the EOP-004-5 “generation loss” • The SDT should at the very minimum include in Attachment 1, “This threshold is not meant to report losses due to weather patterns, lack of wind, change in irradiance, fuel unavailability, curtailment, or a temporary reduction in active power output due to expected operation of the IBR unit(s).” • 500 MW is too small. Several utilities may have single wind / solar farms with gross MW generation over 500 MW. The MRO NSRF suggests the existing Attachment 1 1400 MW ERCOT level or 1500 MW level in PRC-002. • The SDT rationale of using 500 MW for consistency and the Event Analysis Category 1i is wrong. The EA process is a voluntary (while strongly encouraged) below the line process and does not carry zero-defect mandatory standards reporting with million dollar penalties. • MRO NSRF Question: What should be the correct level to strike the balance between “serious events” and “low level” events which don’t deliver value. <ul style="list-style-type: none"> • Regarding the Rationale for “30 second period” • The SDT should at the very minimum include in Attachment 1, “This threshold is not meant to report losses due to weather patterns, lack of wind, change in irradiance, fuel unavailability, curtailment, or a temporary reduction in active power output due to expected operation of the IBR unit(s).” • This might not solve how BA’s determine whether to file a report. BA’s may err on the side of caution and report anyway, having no definitive way of knowing the cause of the event at the time the event report is created. All of that would need to be determined after-the-fact via event analysis working with the individual IBR owner/operators. Lowering the bar too far will likely induce significant work that won’t benefit reliability. <ul style="list-style-type: none"> • Regarding the Rationale for “Telemetry data” • The MRO NSRF understands the SDT is attempting to identify ways to aggregate BES and BPS units, this still violates the fundamental bright line purpose of the BES definition and NERC registration. NERC standards are legal law and cannot be ambiguous. • If NERC and the SDT want both BES and BPS units, they need to register the BPS units. Therefore, all entities are NERC entities and understand they are subject to zero defect laws and must report as required. • Suggest the SDT replace generation loss with “GO-IBR”. By NERC’s own analysis this will capture 97.5% of all BPS MW at the transmission and subtransmission level. 	

- **Overarching Strategy:**

- The MRO NSRF understands NERC has at least 22 NERC standard projects open and 40 some SARs in the queue.
- NERC needs an overall conforming strategy.
- Various group and drafting teams are each tackling projects separately and many are introducing “ambiguous” terms and concepts to reach beyond the BES definition.
- The MRO NSRF suggests to enhance drafting team coherence and to aid in industry acceptance, NERC drafting teams should now focus on the GO-IBR definition and level as the next coherent strategy.

Likes 0

Dislikes 0

Response

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer

Document Name

Comment

Thank you for the opportunity to comment, AEPC has signed on to ACES comments:

We at ACES believe that it is a worthwhile effort to update the NERC Reliability Standards to incorporate IBRs; however, we have concerns about the seemingly interchangeable usage of the IBR and DER terms. To date, there is no approved definition for either of these terms in the “Glossary of Terms Used in NERC Reliability Standards”. This has the potential of each SDT attempting to define these terms to align with the standards they are writing. We recommend that NERC adopt a fixed definition for each term to be included in the “Glossary of Terms Used in NERC Reliability Standards”. The proposed approach will limit any inconsistencies in application of standards and minimize confusion across the industry.

Likes 0

Dislikes 0

Response

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer

Document Name

Comment

NERC should follow their own federally approved processes to achieve reliability objectives such as registering the proper entities and auditing instead of off-loading the responsibility onto entities that have neither the legal or regulatory authority or ability to enforce.

If distributed generation below 100 kV levels is of concern, NERC should seek to appropriately register those entities as NERC entities allowing NERC standards to work as intended and hold each entity responsible for their own NERC compliance.

Likes 0

Dislikes 0

Response

Thomas Foltz - AEP - 5

Answer

Document Name

Comment

Footnote 1 includes redundant text, likely unintentional. Please revise accordingly.

Likes 0

Dislikes 0

Response

Alain Mukama - Hydro One Networks, Inc. - 1

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response