NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project Name:	2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination | Draft 2
Comment Period Start Date:	8/3/2022
Comment Period End Date:	9/1/2022
Associated Ballots:	2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination EOP-012-1 | Non-binding Poll AB 2 NB 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination EOP-012-1 AB 2 ST 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination Implementation Plan AB 2 OT

There were 100 sets of responses, including comments from approximately 237 different people from approximately 158 companies representing 10 of the Industry Segments as shown in the table on the following pages.

All comments submitted can be reviewed in their original format on the project page.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President of Engineering and Standards, Howard Gugel (via email) or at (404) 446-9693.

Questions

1. The SDT is proposing three new definitions from the initial posting of EOP-012. Does adding definitions of Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event provide additional clarity to the requirements of EOP-012? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

2. Do you agree with the proposed definitions of Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

3. Is the revised Applicability Section language clear? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

4. Do you support the SDT proposed 12-hour timeframe to require new Generation units to be capable of performing at or below the Extreme Cold Weather Temperature? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

5. Do you support the SDT proposed 1-hour timeframe to allow existing Generation units to demonstrate their performance at or below the Extreme Cold Weather Temperature? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

6. Do you support the addition of a 20 megawatt minimum (corresponding to the definition of a BES impacting generating unit) for requiring CAPS for derates? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

7. **The SDT believes that with the proposed modifications to EOP-012-1, the initial proposed implementation plan is appropriate with one change. The 18-month implementation time frame is for all revised and new requirements in EOP-012-1, except Requirements R1 and R2 which have a 60-month implementation time frame, and R4 which has a 78-month implementation time frame. Do you agree with this implementation time frame? If you think an alternate timeframe is needed, please propose an alternate implementation plan and time period, and provide a detailed explanation of actions planned to meet the implementation deadline.**

8. **The SDT proposes that the modifications in the proposed EOP-012-1 meet the key recommendations in The Report 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.**

9. **Provide any additional comments for the standard drafting team to consider, including the provided technical rationale document, if desired.**

The Industry Segments are:

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

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
DTE Energy - Detroit Edison Company	Adrian Raducea	5		DTE Energy - DTE Electric	Karie Barczak	DTE Energy - Detroit Edison Company	3	RF
					Adrian Raducea	DTE Energy - Detroit Edison	5	RF
					patricia ireland	DTE Energy	4	RF
Portland General Electric Co.	Brooke Jockin	1		Portland General Electric Co.	Brooke Jockin	Portland General Electric	1	WECC
					Dan Mason	Portland General Electric	6	WECC
					Ryan Olson	Portland General Electric	5	WECC
					Adam Menendez	Portland General Electric Co.	3	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
PPL - Louisville Gas and Electric Co.	Devin Shines	3,5,6	RF,SERC	Louisville Gas and Electric Company and Kentucky Utilities Company	Charles Freibert	PPL - Louisville Gas and Electric Co.	3	SERC
					JULIE HOSTRANDER	PPL - Louisville Gas and Electric Co.	5	SERC
					Linn Oelker	PPL - Louisville Gas and Electric Co.	6	SERC
OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove	3		OGE Energy	Donald Hargrove	OGE Energy - Oklahoma Gas and Electric Co.	3	MRO
					Terri Pyle	OGE Energy - Oklahoma Gas and Electric Co.	1	MRO
					Patrick Wells	OGE Energy - Oklahoma Gas and Electric Co.	5	MRO
					Ashley Stringer	OGE Energy - Oklahoma Gas	6	MRO

						and Electric Co.		
Elizabeth Davis	Elizabeth Davis		RF,SERC	ISO/RTO Council (IRC) Standards Review Committee (SRC)	Mike Del Viscio	PJM	2	RF
					Becky Davis	PJM	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Charles Yeung	Southwest Power Pool, Inc. (RTO)	2	MRO
					Helen Lainis	IESO	2	NPCC
					Bobbi Welch	Midcontinent ISO, Inc.	2	RF
					Kathleen Goodman	ISO-NE	2	NPCC
					Nathan Bigbee	ERCOT	2	Texas RE
					Ali Miremadi	California ISO	2	WECC
Lincoln Electric System	Eric Ruskamp	6		LES	Eric Ruskamp	Lincoln Electric System	6	MRO
					Dan Pudenz	Lincoln Electric System	1	MRO

					Jason Fortik	Lincoln Electric System	3	MRO
					Kayleigh Wilkerson	Lincoln Electric System	5	MRO
Jennie Wike	Jennie Wike		WECC	Tacoma Power	Jennie Wike	Tacoma Public Utilities	1,3,4,5,6	WECC
					John Merrell	Tacoma Public Utilities (Tacoma, WA)	1	WECC
					Marc Donaldson	Tacoma Public Utilities (Tacoma, WA)	3	WECC
					Hien Ho	Tacoma Public Utilities (Tacoma, WA)	4	WECC
					Terry Gifford	Tacoma Public Utilities (Tacoma, WA)	6	WECC
					Ozan Ferrin	Tacoma Public Utilities (Tacoma, WA)	5	WECC
ACES Power Marketing	Jodirah Green	6	MRO,NA - Not Applicable,RF,SERC,Texas RE,WECC	ACES Standard Collaborations	Bob Solomon	Hoosier Energy Rural Electric	1	SERC

						Cooperative, Inc.		
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Bill Hutchison	Southern Illinois Power Cooperative	1	SERC
					Scott Berry	Wabash Valley Power Association	3	RF
					Nick Fogleman	Prairie Power, Inc.	1	SERC
					Ryan Strom	Buckeye Power, Inc.	5	RF
					Ellen Watkins	Sunflower Electric Power Corporation	1	MRO
					Patti Metro	National Rural Electric Cooperative Association	3	NA - Not Applicable
					Patti Metro	National Rural Electric Cooperative Association	3	NA - Not Applicable

Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
MRO	Kendra Buesgens	1,2,3,4,5,6	MRO	MRO NSRF	Bobbi Welch	Midcontinent ISO, Inc.	2	MRO
					Christopher Bills	City of Independence Power & Light	3,5	MRO
					Fred Meyer	Algonquin Power Co.	3	MRO
					Jamie Monette	Allete - Minnesota Power, Inc.	1	MRO
					Larry Heckert	Alliant Energy Corporation Services, Inc.	4	MRO
					Marc Gomez	Southwestern Power Administration	1	MRO
					Matthew Harward	Southwest Power Pool, Inc.	2	MRO
					LaTroy Brumfield	American Transmission Company, LLC	1	MRO

					Bryan Sherrow	Kansas City Board Of Public Utilities	1	MRO
					Terry Harbour	MidAmerican Energy	1,3	MRO
					Jamison Cawley	Nebraska Public Power	1,3,5	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					David Heins	Omaha Public Power District	1,3,5,6	MRO
					George Brown	Acciona Energy North America	5	MRO
					Jaimin Patel	Saskatchewan Power Corporation	1	MRO
					Kimberly Bentley	Western Area Power Administration	1,6	MRO
Duke Energy	Kim Thomas	1,3,5,6	FRCC,RF,SERC,Texas RE	Duke Energy	Laura Lee	Duke Energy	1	SERC
					Dale Goodwine	Duke Energy	5	SERC
					Greg Cecil	Duke Energy	6	RF

LaKenya VanNorman	LaKenya VanNorman		SERC	Florida Municipal Power Agency (FMPA)	Chris Gowder	Florida Municipal Power Agency	5	SERC
					Dan O'Hagan	Florida Municipal Power Agency	4	SERC
					Carl Turner	Florida Municipal Power Agency	3	SERC
					Jade Bulitta	Florida Municipal Power Agency	6	SERC
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
					Tricia Bynum	FirstEnergy - FirstEnergy Corporation	6	RF
					Mark Garza	FirstEnergy- FirstEnergy	4	RF

Public Utility District No. 1 of Chelan County	Meaghan Connell	5		PUD No. 1 of Chelan County	Joyce Gundry	Public Utility District No. 1 of Chelan County	3	WECC
					Diane Landry	Public Utility District No. 1 of Chelan County	1	WECC
					Glen Pruitt	Public Utility District No. 1 of Chelan County	6	WECC
					Meaghan Connell	Public Utility District No. 1 Chelan County	5	WECC
Michael Johnson	Michael Johnson		WECC	PG&E All Segments	Marco Rios	Pacific Gas and Electric Company	1	WECC
					Sandra Ellis	Pacific Gas and Electric Company	3	WECC
					James Mearns	Pacific Gas and Electric Company	5	WECC
Southern Company - Southern	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern	1	SERC

Company Services, Inc.						Company Services, Inc.		
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Jim Howell	Southern Company - Southern Company Services, Inc. - Gen	5	SERC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC Regional Standards Committee	Gerry Dunbar	Northeast Power Coordinating Council	10	NPCC
					Randy MacDonald	New Brunswick Power	2	NPCC
					Glen Smith	Entergy Services	4	NPCC

Alan Adamson	New York State Reliability Council	7	NPCC
David Burke	Orange & Rockland Utilities	3	NPCC
Harish Vijay Kumar	IESO	2	NPCC
David Kiguel	Independent	7	NPCC
Nick Kowalczyk	Orange and Rockland	1	NPCC
Joel Charlebois	AESI - Acumen Engineered Solutions International Inc.	5	NPCC
Mike Cooke	Ontario Power Generation, Inc.	4	NPCC
Salvatore Spagnolo	New York Power Authority	1	NPCC
Shivaz Chopra	New York Power Authority	5	NPCC

Deidre Altobell	Con Ed - Consolidated Edison	4	NPCC
Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
Cristhian Godoy	Con Ed - Consolidated Edison Co. of New York	6	NPCC
Nurul Abser	NB Power Corporation	1	NPCC
Randy MacDonald	NB Power Corporation	2	NPCC
Michael Ridolfino	Central Hudson Gas and Electric	1	NPCC
Vijay Puran	NYSPS	6	NPCC
ALAN ADAMSON	New York State Reliability Council	10	NPCC

					Sean Cavote	PSEG - Public Service Electric and Gas Co.	1	NPCC
					Brian Robinson	Utility Services	5	NPCC
					Quintin Lee	Eversource Energy	1	NPCC
					John Pearson	ISONE	2	NPCC
					Nicolas Turcotte	Hydro-Qu?bec TransEnergie	1	NPCC
					Chantal Mazza	Hydro-Quebec	2	NPCC
					Michele Tondalo	United Illuminating Co.	1	NPCC
					Paul Malozewski	Hydro One Networks, Inc.	3	NPCC
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
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Entity Monitoring	Steve Rueckert	WECC	10	WECC
					Phil O'Donnell	WECC	10	WECC
Tim Kelley	Tim Kelley		WECC	SMUD / 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	3	SERC

	Cooperative, Inc.		
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

1. The SDT is proposing three new definitions from the initial posting of EOP-012. Does adding definitions of Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event provide additional clarity to the requirements of EOP-012? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
These definitions continue to add an administrative burden on those entities who operate, and are designed to operate in cold climates. Specifically, many hydro projects in northern climates that operate in sub-zero weather have dealt with extreme temperature operations successfully. How much more planning and preparation must be made when we already operate to -28 F during the winter? We may see seasons with more river ice, but that is not unusual. Months of preplanning will not prevent river icing, or the work that must be done to mitigate the effects.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time.	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	

The proposed definitions are insufficient; another is needed for temperature. The issue at hand cannot be addressed using only readings from thermometers (dry bulb temperature, DBT). Generic references to, "the temperature," as in the Extreme Cold Weather Temperature definition, therefore degrade clarity due to lack of specificity.

The parameter of interest for conventional generation plants is the wind chill temperature (WCT), combining the effects of DBT and wind speed in causing heat transfer. Winter Storm Uri, the Polar Vortex of 2014, and the 2011 Southwest Cold Weather Event all achieved an "extreme" classification by virtue of involving high winds, and any standard on the subject must explicitly address this point. RCs, BAs and TOPs cannot adequately plan for winter storm-related threats to the BES if using DBT-based generation plant capability data for an inherently WCT-based phenomenon.

Some manufacturers of wind turbines offer winterization packages based on DBT, however, so it may be necessary for EOP-012-1 to say that WCT or DBT is to be used as applicable for the generation technology at hand. An alternative, universal approach is to say that "temperature" in the present context means DBT plus a 20 mph wind, this being a typical sustained wind condition for the worst hours of the aforementioned grid emergencies.

The Guidance section of EOP-012-1 should then explain that the WCT scale is to be used for transposing capability data. A conventional plant that is protected to -10 F DBT with a 5 mph wind (-22 F WCT), for example, is to state its EOP-012-1 capability as being 0 F DBT (-22 F WCT when combined with a 20 mph wind).

A definition is also needed for freezing, and it should clarify how precipitation fits into the picture. We propose, "The transition of water to ice, or congealing of fluids to the point of affecting operations (e.g. for lube oil, fuel oil and water treatment chemicals). The effects of precipitation stand separate from freezing." The Guidance section of the standard should add, "A unit having a freeze prevention capability of -15 F DBT with a 20 mph wind, for example, might be forced offline by a snow or ice storm at 30 F."

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time. The SDT also notes that the Standard Processes Manual, section 5.1, states that "If a term is used in a Reliability Standard

according to its common meaning (as found in a collegiate dictionary), the term shall not be proposed for addition to the Glossary of Terms", therefore, the SDT does not agree with developing definitions for temperature and freezing.	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No
Document Name	
Comment	
Talen Marketing LLC supports Talen Generation's comments.	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation disagrees that the proposed Glossary Terms provide clarity for the proposed requirements of EOP-012. The most significant issues are what is meant by "susceptible to freezing issues" and "fuel supply component." The phrase "susceptible to freezing" is not relevant for solar and wind. While this equipment may have frozen precipitation on them, the component itself is not frozen. The phrase "fuel supply component" is not relevant for hydro, solar, and wind. Exempting components located inside temperature controlled buildings that are not susceptible to freezing would allow entities to focus on components that actually pose a risk to the BES. This seems to be the intent of the SDT, but needs to be clearly written in the standard.	

A reliability standard should be applicable to specific reliability functions (e.g., Generator Owner, Generator Operator), specific geographic locations (e.g., south of 35 degrees latitude), and/or specific equipment (e.g., gas, solar, wind). Reclamation observes that undue effort is being spent on precisely identifying the specific cold weather conditions under which the standard applies. Reclamation asserts this effort will result in a disservice to the intent of ensuring electric reliability during cold weather because the narrow applicability will allow critical electrical infrastructure to be exempt from the proposed requirements. Reclamation observes that many of the issues the SDT appears to be trying to address and that entities have commented about would be better addressed in a forum outside of electric reliability standards, e.g., marketing issues. It appears that the electric industry is being inappropriately tasked with solving a problem the root cause of which may not be within its purview.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 6	
Answer	No
Document Name	
Comment	
The definitions do not meet their objective as described in question 2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time.	

Shannon Ferdinand - Decatur Energy Center LLC - 5	
Answer	No
Document Name	
Comment	
Capital Power supports the North American Generators Forum (NAGF) response to this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF.	
Whitney Wallace - Calpine Corporation - 5 - WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
Outages on GO controlled transmission lines caused by ice storms should not be included in a Generator Cold Weather Reliability Event (GCWRE). Also, GOs should be exempted from including forced outages as GCWREs if the forced outage was caused by a loss of offsite power caused by a BES grid event (e.g., load shed, low frequency, sub-synchronous resonance, etc.) or other transmission events unrelated to the GO Operation. In addition, GO operators should be exempted from including forced outages due to loss of fuel supply for any reason outside of the GO's control. For these events, the exemption should apply to not only the time of the event, but also to any recovery time required to implement corrective actions needed as a direct result of the causal event.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. Please note that the definition of Generator Cold Weather critical component starts with “Any generating unit component or associated fixed fuel supply that is under the Generator Owner’s control and is susceptible to freezing issues”. The SDT’s intent would be that all of the instances cited above would fall out of scope for the new proposed standard based on this definition. The SDT has provided further clarity in the Technical Rationale and may consider your comments in phase two.	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
The proposed definitions for Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event provide needed additional clarity to the requirements for EOP-012. However, we have some concerns with the proposed definition of Generator Cold Weather Critical Component and Generator Cold Weather Reliability Event.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees that the addition of these key terms provide additional clarity to the proposed standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	

The SDT appreciates your review.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Avista agrees that the proposed definitions for Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event provide needed clarity to the requirements for EOP-012-1. However, we recommend additional revisions to the definitions of Generator Cold Weather Critical Component and Generator Cold Weather Reliability Event to provide enhanced clarity, to be addressed during the 2nd phase of this project. (See our response to Question 2)	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Brooke Jockin - Portland General Electric Co. - 1, Group Name Portland General Electric Co.	
Answer	Yes
Document Name	
Comment	
Portland General Electric Company supports the survey response provided by EEI.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. Please see response to EEI.	
Scott Kinney - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Avista agrees that the proposed definitions for Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event provide needed clarity to the requirements for EOP-012-1. However, we recommend additional revisions to the definitions of Generator Cold Weather Critical Component and Generator Cold Weather Reliability Event to provide enhanced clarity, to be addressed during the 2nd phase of this project. (See our response to Question 2)	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Mark Spencer - LS Power Development, LLC - 5	
Answer	Yes
Document Name	
Comment	
We agree appropriately formed definitions would provide additional clarity if the comments below are addressed.	
Likes 1	Vistra Energy, 5, Roethemeyer Dan
Dislikes 0	

Response	
Thank you for your comment.	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with the EEI and the NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI and NAGF.	
Joe Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports comments from EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3, Group Name OGE Energy	

Answer	Yes
Document Name	
Comment	
OG&E supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E agrees to the proposed definitions and the recommendations supplied by EEI on additional revisions during Phase Two of the Cold Weather project.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Thomas Foltz - AEP - 5	
Answer	Yes

Document Name	
Comment	
AEP would like to express its support of EEI's response to this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	Yes
Document Name	
Comment	
LouisvilleG&E/KU support EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	

Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Alison Mackellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	Yes

Document Name	
Comment	
"Please see comments submitted by the Edison Electric Institute"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
PNM agrees that the proposed definitions for Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event. PNM also supports the comments provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project. Please see response to EEI.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, 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	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #1.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Dan Roethemeyer - Vistra Energy - 5	
Answer	Yes
Document Name	
Comment	
Adding the proposed defined terms provides additional clarity to the requirements of EOP-012, and Vistra supports inclusion of definitions for those terms in the Reliability Standard. However, Vistra recommends refinements to the definitions as described below under Question 2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	

Comment
Exelon agrees that the proposed definitions provide additional clarity to EOP-012-1. Submitted on behalf of Exelon, Segments 1 & 3

Likes 0	
Dislikes 0	

Response
Thank you for your comment.

Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF

Answer	Yes
Document Name	

Comment
Southern Indiana Gas & Electric Company (SIGE) agrees the added definitions of Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event provide additional clarity to the requirements of EOP-012. However, similar to EEI, SIGE also has concerns with the proposed definition of Generator Cold Weather Critical Component and Generator Cold Weather Reliability Event – as addressed in SIGE's response to Question 2.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project. Please see response to EEI.

Stewart Rake - Luminant Mining Company LLC - 7	
Answer	Yes
Document Name	
Comment	
Adding the proposed defined terms provides additional clarity to the requirements of EOP-012, and Vistra supports inclusion of definitions for those terms in the Reliability Standard. However, Vistra recommends refinements to the definitions as described below under Question 2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen	
Answer	Yes
Document Name	
Comment	
ISO-NE agrees that for the context of the new EOP-012 Standard these definitions are needed for clarification purposes, however some modifications to those definitions may be needed as described in Question 2 Comments by the SRC and ISO-NE.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Jamison Cawley - Nebraska Public Power District - 1	
Answer	Yes
Document Name	
Comment	
Yes, the addition of the definitions provides additional clarity to the requirements. The proposed definitions as stand-alone items in the NERC Glossary of Terms will also help to provide uniformity across future Standards dealing with extreme weather such as TPL-001 recently focused on by a FERC NOPR.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Alliant Energy supports the comments submitted by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Please see response to MRO NSRF.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Yes, the addition of the definitions provides additional clarity to the requirements. The MRO NSRF would like to suggest that the three proposed Terms (Generator Cold Weather Critical Component, Extreme Cold Weather Temperature & Generator Cold Weather Reliability Event) be placed in a new section, §6. Definitions Used in this proposed standard, similar to NERC Reliability Standard PRC-005-6 Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance, rather than the NERC Glossary of Terms. The proposed definitions are dependent on NERC Reliability Standard EOP-012-1 – Extreme Cold Weather Preparedness and Operations, §4.2 term "generating unit" to ensure a comprehensive and complete definition. As such, placing the three proposed terms into the NERC Glossary of Terms would prevent them from being fully defined as intended by the Standards Drafting Team and subject to unintentional misinterpretation. The MRO NSRF suggests consideration be given to including these definitions in the NERC Glossary of Terms during future revisions.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	Yes
Document Name	
Comment	
MidAmerican Energy supports the MRO NSRF as well as EEI comments for this question.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to MRO NSRF and EEI.	
Imane Mrini - Austin Energy - 6	
Answer	Yes
Document Name	
Comment	
The definition of Generator Cold Weather Reliability Event, item 1 is not entirely clear. Is the intent to exclude derates equal to 20MW (if they are more than 10%) or equal to 10% of total unit capacity (when more than 20MW)? Suggest rewording to : a forced derate exceeding 10% of the total capacity of the unit but no less than 20 MW for longer than four hours in duration;"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has made some clarifying changes to the Standard to address this concern and may consider your other comments during phase two of the Extreme Cold Weather Standard Development project.	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	Yes
Document Name	
Comment	
MISO supports the comments submitted by the ISO/RTO Council Standards Review Committee (IRC SRC). In addition, we are submitting comments on behalf of MISO as an individual entity.	

MISO thanks the Standard Drafting Team (SDT) for adopting the recommendation in MISO's comments from **Project 2019-06: Cold Weather** to develop a "cold weather" definition. Having a national reference will drive consistency of application across the NERC footprint.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time. The SDT also notes that the Standard Processes Manual, section 5.1, states that "If a term is used in a Reliability Standard according to its common meaning (as found in a collegiate dictionary), the term shall not be proposed for addition to the Glossary of Terms", therefore, the SDT does not agree with developing a definition of cold weather.	
Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3	
Answer	Yes
Document Name	
Comment	
Madison Gas and Electric supports the comments from the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to MRO NSRF.	
Adam Lee - MGE Energy - Madison Gas and Electric Co. - 4	
Answer	Yes
Document Name	

Comment	
Madison Gas and Electric supports the comments of the MRO NSRF	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to MRO NSRF.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
The defined terms do make the proposed requirements clearer. However, there are still areas of ambiguity that Invenergy recommends be addressed. Those recommendations can be found in our response to Question 2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Gerry Adamski - Cogentrix Energy Power Management, LLC - 5	
Answer	Yes
Document Name	
Comment	

We agree the definitions would provide additional clarity.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	
Comment	
Acciona Energy supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	Yes
Document Name	
Comment	
Deanna Carlson, Cowlitz PUD, 5, 9/1/22	
Likes 0	

Dislikes 0	
Response	
The SDT appreciates your review.	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
The ISO/RTO Council (IRC) Standards Review Committee (SRC) supports the addition of definitions for Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Avista agrees that the proposed definitions for Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event provide needed clarity to the requirements for EOP-012-1. However, we recommend additional revisions to the definitions of Generator Cold Weather Critical Component and Generator Cold Weather Reliability Event to provide enhanced clarity, to be addressed during the 2nd phase of this project. (See our response to Question 2)	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	
The defined terms do make the proposed requirements clearer. However, there are still areas of ambiguity that Invenergy recommends be addressed. Those recommendations can be found in our response to Question 2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	
Yes, the addition of the definitions provides additional clarity to the requirements. However, Enel agrees with the MRO NSRF comments that these definitions should also be added to the NERC Glossary of Terms.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project. Please see response to MRO NSRF. The definitions will be added to the NERC Glossary of Terms.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI agrees that the proposed definitions for Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event provide additional clarity to the requirements for EOP-012-1. However, we recommend additional revisions to the definitions of Generator Cold Weather Critical Component and Generator Cold Weather Reliability Event to provide enhanced clarity, that can be addressed during the 2nd phase of this project. (See our response to Question 2)	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
The SDT appreciates your review.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	

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; John Nierenberg, 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, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Brian Evans-Mongeon - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

The SDT appreciates your review.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Michael Watt - Oklahoma Municipal Power Authority - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Devon Tremont - Taunton Municipal Lighting Plant - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Glenn Pressler - CPS Energy - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Sean Steffensen - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Lenise Kimes - City and County of San Francisco - 1,5 - WECC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Meaghan Connell - Public Utility District No. 1 of Chelan County - 5, Group Name PUD No. 1 of Chelan County	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Josh Combs - Black Hills Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
The SDT appreciates your review.	
Micah Runner - Black Hills Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Sheila Suurmeier - Black Hills Corporation - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Tony Skourtas - Los Angeles Department of Water and Power - 3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
The SDT appreciates your review.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Donna Johnson - Oglethorpe Power Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Scott McGough - Georgia System Operations Corporation - 3	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

The SDT appreciates your review.	
Eric Ruskamp - Lincoln Electric System - 6, Group Name LES	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Carl Pineault - Hydro-Qu?bec Production - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Steven Sconce - EDF Renewable Energy - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Mark Young - Tenaska, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Foung Mua, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Wei Shao, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; - Tim Kelley, Group Name SMUD / BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Michelle Amarantos - APS - Arizona Public Service Co. - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
The SDT appreciates your review.	
John Liang - Snohomish County PUD No. 1 - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
LaKenya VanNorman - LaKenya VanNorman On Behalf of: Aaron Casto, Florida Municipal Power Pool, 6; Carl Turner, Florida Municipal Power Agency, 5, 3, 4, 6; Chris Gowder, Florida Municipal Power Agency, 5, 3, 4, 6; Dan O'Hagan, Florida Municipal Power Agency, 5, 3, 4,	

6; David Owens, Gainesville Regional Utilities, 1, 5, 3; Jade Bulitta, Florida Municipal Power Agency, 5, 3, 4, 6; Neville Bowen, Ocala Utility Services, 3; - LaKenya VanNorman, Group Name Florida Municipal Power Agency (FMPA)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	

2. Do you agree with the proposed definitions of Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	

EEI supports all three definitions for this first phase, but we also propose additional revisions to the Generator Cold Weather Critical Component and the Cold Weather Reliability Event because additional clarity is needed that can be addressed during the next phase of this project. (See below.)

Generator Cold Weather Critical Component: Use of the undefined term "fixed fuel supply component" within the proposed definition of Generator Cold Weather Critical Component creates confusion. While we support the explanation provided by the SDT in the Technical Rationale, the Technical Rationale has no standing as a compliance document. For this reason, we recommend defining this term within the framework of the next phase of this project. We suggest the following:

Fixed Fuel Supply Component: Are non-mobile equipment that support the reliable delivery of fuel to the generating unit and under the control the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control would be included. Components that would not be included would be mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location.

Generator Cold Weather Reliability Event: EEI is concerned with the use of the term "specified", as it relates to the start-up time of a generator during cold weather events, because it is unclear who would be responsible for specifying the start-up time. Results Based Standards should "define a particular reliability objective or outcome to be achieved. In its simplest form, a results-based requirement has four components: who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome." (NERC Results Based Standards – Performance Based; https://www.nerc.com/pa/Stand/Pages/ResultsBasedStandards.aspx#:~:text=Results%20based%20standards%20are%20standards,the%20NERC%20Standard%20Processes%20Manual.)	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	No
Document Name	IRC SRC supporting tabled temperatures.pdf
Comment	
The SRC believes two definitions require revising, specifically: 1. **Extreme Cold Weather Temperature (ECWT)**: The SRC evaluated this temperature and found it is not low enough to capture the critical hours during cold weather periods, such as Winter Storm Uri, The South Central United States Cold Weather Event of January 17, 2018, The 2014 Polar Vortex, the February 2011 Southwest Cold Weather Event and the Cold Wave in January 1994. The following information supports the request to lower the ECWT and cover events such as Winter Storm Uri.	

The SDT apparently chose a “look back” date of the year 2000 based on statements on the NOAA website indicating it made some improvements in weather infrastructure around that time. That reason does not justify limiting the look back to 1/1/2000 and misinterprets the NOAA website language. The NOAA website notes it completed its “Modernization and Associated Restructuring” (MAR) effort in 2000. That effort, as the website describes, “modernized” its surface observational infrastructure by incorporating more automation. However, nothing in that effort changed the availability or quality of previous temperature data of NOAA (and its predecessor the National Weather Bureau).

During the NERC presentation on 8/16/22, the Standard Drafting Team (SDT) presented the ECWT for the Dallas, Texas area (12°F). The actual temperature in the Dallas area during Winter Storm Uri was -2°F.

Next, the PJM region experienced extremely cold conditions with a direct impact on reliability (through freezing of coal piles, canal locks and natural gas infrastructure) in 1994. The conditions at that time were the type of conditions the standard should address as they parallel those experienced during Winter Storm Uri. However, limiting the look back to the year 2000 would ignore even this relatively recent (1994) experience for determining ECWT in the PJM region.

The attached chart compares the impact of the proposed ECWT in the PJM region and illustrates how much the 0.2 percentile factor moves the requirement for winterization away from the actual temperature experienced. The results call into question the value of the 0.2 percentile factor.

Some examples included in the chart (please reference additional data and details via the attached file) - all temperatures in degrees Farenheit:

Weather Station = Allentown Lehigh Valley International Airport; Minimum Temp = -9.75; 0.2 Percentile = -0.75; 0.02 Percentile = -6.00; and average lowest temperature over a six hour period = -7.50

Weather Station = Atlantic City International Airport; Minimum Temp = -12.50; 0.2 Percentile = 0.00; 0.02 Percentile = -7.50; and average lowest temperature over a six hour period = -8.33

Weather Station = Chicago O'Hare International Airport; Minumum Temp = -26.00; 0.2 Percentile = -14.00; 0.02 Percentile = -23.00; and average lowest temperature over a six hour period = -24.33

Further, MISO examined two cities in its footprint - Lake Charles, Louisiana (LCH) and Little Rock, Arkansas (LIT) - adversely affected during the February, 2021 event. For LCH, the proposed ECWT would be 24.98° F. When reviewing the hourly data from December 1991 to February

2022, 206 hours meet or fall below that ECWT over thirty-eight days and twenty-five events. LCH also had sixteen hours during Winter Storm Uri the proposed ECWT would exclude.

The proposed ECWT for LIT is 12.92° F. In the hourly data from December 1991 to February 2022, 183 hours meet or fall below that ECWT over thirty-two days and twenty-one events. LIT also had fifty-seven hours during Winter Storm Uri the proposed ECWT would exclude.

In light of the foregoing, the SRC recommends using a fifty year look back period (replacing the year 2000 with the year 1972). The SRC also recommends striking the 0.2 percentile entirely or, at least, changing it to the 0.**02** percentile so the resulting ECWT more accurately reflects actual cold temperatures.

As an alternative to the addition of a percentile adjustment while avoiding requiring winterization to one extremely cold anomalous hour, the SRC recommends the SDT consider, as a viable alternative, defining the ECWT as a period of sustained cold temperatures (*e.g.*, the average of the lowest recorded six hours at a given location). In short, the day would be divided into six hour blocks (e.g. midnight to 6AM, 6AM to noon, noon to 6PM and 6PM to midnight) with the average coldest temperature during those six hour blocks determine the ECWT. The table attached demonstrates the results for all these options. The SDT may need to do additional work in this area, however, the SRC has seen insufficient justification for using the proposed 0.2 percentile factor.

Please note: *The Public Utility Commission of Texas is currently working on a proposed rule establishing a cold weather temperature standard. Accordingly, ERCOT does not support or oppose the SRC's comments on the Extreme Cold Weather Temperature definition.*

2. **Generator Cold Weather Reliability Event (GCWRE)**: The SRC believes the terms "generating unit" or "unit" does not make it clear the Standard applies to an entire *facility/plant*. The NERC Glossary does not define generation "unit," but many industry people consider an individual turbine/generator a *unit* (*e.g.*, a plant may have four quick start Combustion Turbine *units* and one combined cycle *unit*). The SDT should review and revise the "Applicability" section of EOP-012-2 to clearly identify how the standard applies to dispersed generation resources. This is not a new concept and is supported by the work previously completed under Project 2014-01: Standards Applicability for Dispersed Generation Resources.

The NERC Glossary defines a *Facility* as "a set of electrical equipment that operates as a single Bulk Electric System Element (*e.g.*, a line, a generator, a shunt compensator, transformer, *etc.*)" and an *Element* as, "any electrical device with terminals that may be connected to other electrical devices...." Those definitions do not, however, clearly indicate whether "generator" includes *all* the associated

equipment/components the Standard seeks to cover. By way of example, other NERC Glossary definitions use "generating unit" and/or "generating facility" but not always in the same way, for example:

- Blackstart Resource ("A generating unit(s) and its associated set of equipment….")

- Cranking Path ("A portion of the electric system that can be isolated and then energized to deliver electric power from a generation source to enable the startup of one or more other generating units")

- Economic Dispatch ("The allocation of demand to individual generating units on line to effect the most economical production of electricity")

- Forced Outage ("1. The removal from service availability of a generating unit…for emergency reasons….")

- Frequency Measurable Event ("…a cumulative change in generating unit/ generating facility, DC tie and/or firm load pre-perturbation megawatt value to post-perturbation megawatt value absolute deviation greater than 550 MW….")

Thus, referring to the NERC Glossary does not provide an easy solution for this issue. The SRC believes the SDT should include a standard-only definition of *generating unit* or *generating facility*, particularly to ensure it captures dispersed resources adequately. A Standard-only definition could include, for example, "the technology used to convert a primary fuel into electricity including generators, inverters, associated control systems, valves, actuators, other mechanical and electrical components, *etc*." Such an approach would capture PV, wind, natural gas, nuclear, hydro, fuel oil, biomass, *etc*. and ensure the rule covers individual parts of facilities.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.

Natalie Johnson - Enel Green Power - 5

Answer	No
Document Name	
Comment	

Extreme Cold Weather Temperature: On a positive note, Enel prefers the updated criteria. It is a clearer criteria to assess and apply, especially with the focus on December to January months. Enel does support the MRO NSRF comments that industry meteorological experts (i.e NOAA, NWS) should be consulted and involved in this process.

Generator Cold Weather Reliability Event: Enel would like to recommend a few additional edits to the Generator Cold Weather Reliability Event definition. The additional criteria is a step in the right direction but could still lead to undue administrative burden without a corresponding reliability benefit. The 10% of the total capacity and exceeding 20MW is still far too low and could cause Corrective Action Plans for events that do not impact the Bulk Electric System resulting in substantial and unnecessary burdens. Enel suggests again that NERC adopt the same approach used in PRC-004, where misoperations that affect an aggregate nameplate rating of less than or equal to 75MVA of BES facilities **are excluded**. For this reason Enel agrees with the MRO NSRF comments on this defined term. In addition, Enel would like to ensure that criteria is applied to "available" capacity as indicated by the forecasted power curve. Renewables cannot generate during low wind or solar conditions and therefore criteria should not be applied to unavailable capacity or nameplate.

Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.

Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	

Invenergy does not agree with the definitions as currently drafted and offers the following recommendations.

Generator Cold Weather Reliability Event:

As noted below in response to Question 6, Invenergy recommends setting the forced derate threshold in a manner consistent with NERC's BES criteria, using a minimum of 20 MVA for individual generating units and a minimum of 75 MVA for dispersed power producing resources.

Invenergy proposes the following change to condition (1) of the definition:

(1) A forced derate of:

- More than 10% of the total capacity of the unit and exceeding 20 MVA for generating units identified under Inclusion I2 of the BES definition; or
- More than 10% of the total capacity of the generating facility and exceeding 75 MVA for generating units identified under Inclusion I4 of the BES definition.

Additionally, Invenergy recommends removing the word "apparent" from the definition.

Extreme Cold Weather Temperature:

The proposed definition improves on the previous draft by using a percentile instead of the single minimum hourly temperature and data starting on 1/1/2000 rather than 1/1/1975.

As Invenergy did in response to the first ballot, we propose that the methodology use a multi-day average temperature rather than hourly temperatures, and a reliability analysis-based percentile rather than the 0.2 proposed in the latest draft. Without endorsing the exact values proposed, we note the proposal by Commission Staff at the Public Utility Commission of Texas (see Project No. 53401, Electric Weather Preparedness Standards-Phase II, Memorandum and Proposal for Publication dated May 19, 2022) would be expected to yield a more reasonable requirement: "…the lesser of the minimum ambient temperature at which the resource has experienced sustained operations or the 95th percentile minimum average 72-hour temperature reported in ERCOT's historical weather study…for the weather zone in which the resource is located." (Emphasis added.)

To demonstrate the need for this alternative approach, consider solar generators. Under the SDT's proposal, the calculation of the Extreme Cold Weather Temperature will be heavily influenced by colder nighttime temperatures, when there is no solar generation. Using a multi-day period would more reasonably set the minimum temperature standard for these facilities. Finally, Generator Owners need additional detail on the mechanics of calculating the Extreme Cold Weather Temperature as it is presently defined. For example, if hourly temperature data back to 1/1/2000 at a Generator Owner's nearest weather station(s) are unavailable, should the Generator Owner use only the data available at that station, or use an alternative station regardless of the distance from the facility? What fraction of the data from the nearest station must be missing before an alternative station is used?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time. Additionally, the SDT is using the definition of apparent as defined in the dictionary as "clear or manifest to the understanding".	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
Avista supports all three definitions for this first phase, but we also propose additional revisions to the Generator Cold Weather Critical Supply Component and the Cold Weather Reliability Event because additional clarity is needed and that can be addressed during the next phase of this project. (See below) **Generator Cold Weather Critical Supply Component:** Use of the undefined term "fixed fuel supply component" within the proposed definition of Generator Cold Weather Critical Component creates confusion. While we support the explanation provided by the SDT in the	

Technical Rationale, the Technical Rationale has no standing as a compliance document. For this reason, we ask the SDT to consider defining this term within the framework of the next phase of this project. We suggest the following for SDT consideration:

Fixed Fuel Supply Component: Are non-mobile equipment that support the reliable delivery of fuel to the generating unit and under the control the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control would be included. Components that would not be included would be mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location.

Generator Cold Weather Reliability Event: EEI is concerned with the use of the term "specified", as it relates to the start-up time of a generator during cold weather events, because it is unclear clear who would be responsible for specifying the start-up time. Results Based Standards should "define a particular reliability objective or outcome to be achieved. In its simplest form, a results-based requirement has four components: who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome." (NERC Results Based Standards – Performance Based; https://www.nerc.com/pa/Stand/Pages/ResultsBasedStandards.aspx#:~:text=Results%20based%20standards%20are%20standards,the%20NERC%20Standard%20Processes%20Manual.)

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.

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

Answer	No
Document Name	

Comment

AEPC has signed on to ACES comments, please see their responses.

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to ACES.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	No
Document Name	
Comment	
Agree with comments provided by Russell Noble.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to Russell Noble - Cowlitz County PUD.	
Russell Noble - Cowlitz County PUD - 3	
Answer	No
Document Name	
Comment	
While Cowlitz appreciates the effort so far, further improvements are needed. We agree with comments provided by the North American Generator Forum.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF's comments.	
Michelle Amarantos - APS - Arizona Public Service Co. - 5	
Answer	No
Document Name	
Comment	
APS supports all three definitions for this phase. However, we support EEI's proposed revisions to Generator Cold Weather Critical Component and Cold Weather Reliability Event during the next phase of the project. Specifically, APS supports EEI's proposal to add a definition for Fixed Fuel Supply Component to eliminate confusion within the Generator Cold Weather Critical Component definition. Additionally, APS agrees that within the Generator Cold Weather Reliability definition, the use of term "specified" as it relates to the start-up time of a generator during cold weather events is ambiguous, as it unclear who would be responsible for specifying the start-up time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project.	
Whitney Wallace - Calpine Corporation - 5 - WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	

See comment for Question 1. For Start Failure, the line should read, "a start-up failure where the unit fails to synchronize within a specified and scheduled start-up time." The addition of "**and scheduled**" makes it clear that a failed start resulting from a GO starting a unit on its own accord or during testing would not be reported as a failed start under the winterization program.

The definition of GCWRE should be clarified to state (changes are bold):

Generator Cold Weather Reliability Event: **A failure of a Generator Cold Weather Critical Component that causes** one of the following events:

(1) a forced derate of more than 10% of the total capacity of the unit and exceeding 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified **and scheduled** start-up time; or

(3) a Forced Outage, for which the apparent cause(s) is due to freezing of equipment within the Generator Owner's control and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature.

Furthermore, a component failure that occurs during a cold weather event but was not caused by the cold weather event should not fall under this Standard. NERC should revise the Standard to make this clear.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project.

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

Answer	No
Document Name	

Comment	
The proposed definition for Cold Weather Reliability Event uses the language “total capacity of the unit” which is vague and not defined in the NERC Glossary of Terms. SMUD recommends that the language “Facility Rating of the unit” be used which is more specific and includes a NERC defined term that is referenced in other reliability standards.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project.	
George Brown - Acciona Energy North America - 5	
Answer	No
Document Name	
Comment	
Acciona Energy supports Midwest Reliability Organization’s (MRO) NERC Standards Review Forum’s (NSRF) comments on this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to Midwest Reliability Organization’s (MRO).	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	No
Document Name	
Comment	

For the second item, the “specified time” is ambiguouse. If it is completely up to the generator operator, then is is not a standard. Perhaps the specified time could be required to be included in the Operating Plan or Data requirements of R3.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	

Invenergy does not agree with the definitions as currently drafted and offers the following recommendations.

Generator Cold Weather Reliability Event:

As noted below in response to Question 6, Invenergy recommends setting the forced derate threshold in a manner consistent with NERC’s BES criteria, using a minimum of 20 MVA for individual generating units and a minimum of 75 MVA for dispersed power producing resources.

Invenergy proposes the following change to condition (1) of the definition:

(1) A forced derate of:

- More than 10% of the total capacity of the unit and exceeding 20 MVA for generating units identified under Inclusion I2 of the BES definition; **or**
- More than 10% of the total capacity of the generating facility and exceeding 75 MVA for generating units identified under Inclusion I4 of the BES definition.

Additionally, Invenergy recommends removing the word “apparent” from the definition.

Extreme Cold Weather Temperature:

The proposed definition improves on the previous draft by using a percentile instead of the single minimum hourly temperature and data starting on 1/1/2000 rather than 1/1/1975.

As Invenergy did in response to the first ballot, we propose that the methodology use a multi-day average temperature rather than hourly temperatures, and a reliability analysis-based percentile rather than the 0.2 proposed in the latest draft. Without endorsing the exact values proposed, we note the proposal by Commission Staff at the Public Utility Commission of Texas (see Project No. 53401, Electric Weather Preparedness Standards-Phase II, Memorandum and Proposal for Publication dated May 19, 2022) would be expected to yield a more reasonable requirement: “…the lesser of the minimum ambient temperature at which the resource has experienced sustained operations or **the 95th percentile minimum average 72-hour temperature** reported in ERCOT’s historical weather study…for the weather zone in which the resource is located.” (Emphasis added.)

To demonstrate the need for this alternative approach, consider solar generators. Under the SDT’s proposal, the calculation of the Extreme Cold Weather Temperature will be heavily influenced by colder nighttime temperatures, when there is no solar generation. Using a multi-day period would more reasonably set the minimum temperature standard for these facilities.

Finally, Generator Owners need additional detail on the mechanics of calculating the Extreme Cold Weather Temperature as it is presently defined. For example, if hourly temperature data back to 1/1/2000 at a Generator Owner’s nearest weather station(s) are unavailable, should the Generator Owner use only the data available at that station, or use an alternative station regardless of the distance from the facility? What fraction of the data from the nearest station must be missing before an alternative station is used?

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split

on this matter, the SDT disagrees with making the proposed change at this time. Additionally, the SDT is using the definition of apparent as defined in the dictionary as “clear or manifest to the understanding”.	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	No
Document Name	
Comment	

The current definitions as written leave ample room for interpretation. While this is often desired, we believe that in this instance they do not provide enough clarity to the requirements of EOP-012. The specific concerns with the current verbiage are as follows:

Generator Cold Weather Critical Component: While the open-endedness of “any generating unit component” is desired in that it allows the GO to identify critical components on a per-unit basis, it does not appear to include any “common” equipment shared between units. Examples would include service water, instrument air, ammonia, ash handling, common bus isolation breakers/switches, etc.

The proposed modification to the definition is: “Any generating unit component or associated fixed fuel supply component, to include any critical equipment shared between multiple units (i.e. Balance of Plant (BOP) and/or Common equipment), that is under the Generator Owner’s control and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event.”

Extreme Cold Weather Temperature: The flexibility and intent behind using the “lowest 0.2 percentile” is greatly appreciated; however, the requirement to use “the hourly temperatures measured” seems a bit excessive. Given the inherent difficulty of compiling a dataset containing greater than 49,000 data points and then calculating the lowest 0.2 percentile, we recommend modifying the definition to include daily minimum temperatures from the same time period. This modification would reduce the size of the dataset significantly (down to ~2076 total days) and should not change the resulting Extreme Cold Weather Temperature by any significant statistical margin given that the daily minimum will contain the hourly minimums.

Lastly, the requirement to use a fixed data start date of 01/01/2000 means the dataset will grow by approximately 2,160 data points if using the hourly metric while only 90 data points if using the daily minimum metric. Therefore, it is our recommendation to use a 20-year rolling time period if staying with the hourly metric.

If the hourly metric is to remain, a proposed modification to the definition would be: "The temperature equal to the lowest 0.2 percentile of the actual hourly temperatures measured in December, January, and February from the previous 20 years immediately prior to the date the temperature is calculated. "

The preferred modification would be to abandon the hourly metric in favor of the daily minimum metric. Thus the *preferred* proposed modification to the definition is: "The temperature equal to the lowest 0.2 percentile of the actual daily minimum temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated."

Generator Cold Weather Reliability Event: Pertaining to event type 2 that may constitute a Generator Cold Weather Reliability Event (GCWE):

2. "A start-up failure where the unit fails to synchronize within a specified start-up time": Who specifies the start-up time? Per the draft Technical Rationale and Justification for EOP-012-1, start-up failures are defined using a modified version of the GADS definition in order to ensure consistency across all jurisdictions for this standard. Our concern stems from the language in R2 that references the GADS definition of "specified start-up time" without providing the additional clarification found in the 2022 GADS Data Reporting Instructions. Our recommendation is to modify this subsection as follows: "A start-up failure where the unit fails to synchronize within a specified start-up time. The specified start-up time period for each unit is determined by the GO/GOP based on the condition of the unit at the time of start-up."

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The SDT may consider your comments on both the Cold Weather Reliability Event and Generator Cold Weather Reliability Event definitions during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.

Adam Lee - MGE Energy - Madison Gas and Electric Co. - 4

Answer	No

Document Name	
Comment	
Madison Gas and Electric supports the comments of the MRO NSRF	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to Midwest Reliability Organization's (MRO).	
Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3	
Answer	No
Document Name	
Comment	
Madison Gas and Electric supports the comments from the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to Midwest Reliability Organization's (MRO).	
Shannon Ferdinand - Decatur Energy Center LLC - 5	
Answer	No
Document Name	
Comment	

Capital Power supports the North American Generators Forum (NAGF) response to this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF.	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	No
Document Name	
Comment	

MISO supports the comments submitted by the ISO/RTO Council Standards Review Committee (IRC SRC). In addition, we are submitting comments on behalf of MISO as an individual entity.

In analyzing the proposed Extreme Cold Weather Temperature, MISO discovered that it doesn't go far enough to capture many of the hours in recent major cold weather events, including Winter Storm Uri (February 2021), South Central Cold Weather Event (January 2018) and the Polar Vortex (January 2014). **Without an adequate temperature definition, the standard will not achieve its intended outcome or provide a measurable reliability benefit as the balance of winterization requirements hinge upon the adequacy of this definition**.

The current **Extreme Cold Weather Temperature (ECWT)** definition sets "the temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated."

In analyzing the proposed definition, we found that **the lowest 0.2 percentile is insufficient to capture many of the hours in past extreme events** (*see* detailed analysis below). Therefore, we recommend the SDT modify the percentile. One option is to model this threshold after an established industry percentile; e.g. the Loss of Load Expectation (LOLE) which is equivalent to one day in ten years. This equates to:

LOLE = 1 day/(10 years x 365 days/year) = 0.000274 or **0.0274 percentile** almost 10 times less than the current benchmark.

In contrast, the current 0.2 percentile in the ECWT definition equates to:

ECWT = 1 day/(0.002 x 365 days/year) = **1 day every 1.37 years** which indicates a need to plan for a loss of load expectation (LOLE) on an almost annual or yearly basis.

Planning to shed load in support of a major event on an annual basis fails to adequately address the findings from past major events and will not provide measurable reliability benefits. Therefore, **MISO recommends the SDT adopt a more stringent percentile such as that for LOLE (of 0.0274)** in determining the Extreme Cold Weather Temperature definition.

Using a smaller percentile also has the added benefit of addressing Generator Owner concerns that the definition not be based on the single coldest hour experienced; but rather a temperature for which has been realized on multiple occasions over a period of time.

MISO Temperature Analysis

To evaluate the adequacy of the Extreme Cold Weather Temperature definition, MISO examined two cities in its footprint - Lake Charles, Louisiana (LCH) and Little Rock, Arkansas (LIT) – both of which were adversely affected during the Winter Storm Uri (February 2021) event.

For LCH, the proposed ECWT would be 24.98° F. When reviewing the hourly data from December 1991 to February 2022, 206 hours meet or fall below that ECWT over thirty-eight days and twenty-five events. LCH also had sixteen hours (16) during Winter Storm Uri the proposed ECWT would exclude.

The proposed ECWT for LIT is 12.92° F. In the hourly data from December 1991 to February 2022, 183 hours meet or fall below that ECWT over thirty-two days and twenty-one events. LIT also had fifty-seven (57) hours during Winter Storm Uri the proposed ECWT would exclude.

In light of the foregoing, the SRC recommends using a fifty year look back period (replacing the year 2000 with the year 1972). The SRC also recommends striking the 0.2 percentile entirely or, at least, changing it to the 0.**02** percentile so the resulting ECWT more accurately reflects *extreme* cold temperatures.

Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time.	
Imane Mrini - Austin Energy - 6	
Answer	No
Document Name	
Comment	
The definition of Generator Cold Weather Reliability Event, item 1 is not entirely clear. Is the intent to exclude derates equal to 20MW (if they are more than 10%) or equal to 10% of total unit capacity (when more than 20MW)? Suggest rewording to : a forced derate exceeding 10% of the total capacity of the unit but no less than 20 MW for longer than four hours in duration;"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has made some clarifying changes to the Standard to address this concern.	
Mark Young - Tenaska, Inc. - 5	
Answer	No
Document Name	
Comment	
Generator Cold Weather Reliability Event - In (1), (2), and (3), change “unit” to “unit or combined cycle block”. The event descriptions do not specifically indicate events relating to freezing. Suggested change:	

*(1) a forced derate **due to freezing equipment**, which results in more than 10% of the total capacity of the unit and exceeding 20 MWs for longer than four hours in duration* *(2) a start-up failure where the unit fails to synchronize within a specified start-up time **due to freezing equipment.*** On a temperature related note, unless there has been some analysis of historical data to substantiate it, imposing the 20mph wind assumption on top of the temperature requirement will likely cause plants to design for a theoretical weather condition that has never existed. Given the costs and challenges involved with this effort, we should not be basing design on arbitrary assumptions. Also relating to temperature, “Design temperature”, “historical operating temperature”, or “current cold weather performance temperature” do not have a practical meaning for wind turbines with respect to cold weather reliability. Wind turbines are often rated to perform at extremely low temperatures. The reliability issue is icing “conditions” which usually happen at temperatures much higher than the lowest rated temperature. Icing conditions are related to a combination of temperature and moisture vs a specific low temperature. Additionally, there is no known technology that reliably mitigates all icing concerns.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition and wind criteria during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.

Steven Sconce - EDF Renewable Energy - 5	
Answer	No
Document Name	

Comment	
The term Generator is not clearly defined. Please refer to our comments in question #4 and #5. EDF supports the comments of NAGF and EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project. Also, please see the responses to NAGF and EEI comments.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	No
Document Name	
Comment	
MidAmerican Energy supports the EEI and NSRF comments for this question. We would also expound on NSRF's comments that one location's weather data would mean over 175,000 points of data.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project. Also, please see the responses to NSRF and EEI comments.	
Carl Pineault - Hydro-Qu?bec Production - 1,5	
Answer	No
Document Name	
Comment	

How is the BA held responsible for determining what is considered the “winter season”? EOP-012-1 section 4.2 lacks clarity and there are no requirements concerning this responsibility, nor is it mentioned in the TR.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project. Please note that the concept of the BA determining a “winter season” has been removed from the proposed Standard.

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer	No
Document Name	

Comment

- Generator Cold Weather Reliability Event

The MRO NSRF disagrees with the definition of Generator Cold Weather Reliability Event as written. We believe that 10% of the total capacity and exceeding 20MW is far too low for many generating units. The MRO NSRF appreciates the Standard Drafting Teams (SDT) adding the “and exceeding 20MW” prose for a Generator Cold Weather Reliability Event. However, we would suggest tying the magnitude back to a reliability concept such as the BES Definition: 75MVA/20MVA. The simple reasoning is that for a 100MVA facility identified under Inclusion I4 of the BES Definition, a derate of 10% (10MVA) and 20MW would not constitute a reliability concern as it does not even meet the thresholds to be BES for generation facilities identified under inclusion I4. Given that, the MRO NSRF believes the threshold for a Generator Cold Weather Reliability Event as currently proposed is adding an undue administrative burden without a clear increase in reliability.

The MRO NSRF suggests the following language modification to this Definition:

Generator Cold Weather Reliability Event - One of the following events, for which the apparent cause(s) is due to freezing of equipment within the Generator Owner’s control and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of:

- *10% or greater than or equal to 20MVA of the Facility Rating, whichever is greater, for generating units identified under Inclusion I2 of the BES definition*

or

- *10% or greater than or equal to 75MVA of the Facility Rating, whichever is greater, for generating units identified under Inclusion I4 of the BES definition*

for longer than four hours in duration;

(2) a start-up failure where the *generating* unit fails to synchronize within a specified start-up time;

or

(3) a Forced Outage.

If the current ballot gains approval without changes to the proposed language of the Standard, the MRO NSRF would like to suggest addressing the afforemention comments in a future phase of this project.

- Extreme Cold Weather Temperature

Regarding Extreme Cold Weather Temperature, the MRO NSRF would like to thank the SDT for the changes incorporated from Draft 1 to Draft 2. While we appreciate the effort to reduce the burden on Generator Owner and Generator Operators to evaluate the Extreme Cold Weather Temperature, we disagree with the proposed definition for several reasons. First, the MRO NSRF would suggest the SDT to work with the National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), team members of the FERC, NERC and Regional Entity Staff Report to develop the appropriate percentile this definition will require Generator Owners and Generator Operators to meet in Requirements R1 and R2. Within the technical rationale, the SDT states “select the 0.2 percentile of winter month temperatures since 1/1/2000 to identify a temperature which has been rarely surpassed, but which allows some margin for a Generator Owner to have previously demonstrated successful operation”. While we agree with a statistical approach, we cannot support the level of 0.2 percentile without a scientific and statistical analysis to determine if 0.2 is appropriate.

As it relates to the portion of the of the definition that states “from 1/1/2000 through the date the temperature is calculated”, the MRO NSRF suggests two items. First, confer with the members from NOAA, NWS and ECCC to confirm that keeping 1/1/2000 as the baseline date is appropriate (for example, not dropping the oldest 5 year period for each new calculation) or if it should be on a latest 15, 20, 30 winter season basis. Secondly, the way the current language is proposed, in conjunction with requirement R4, we are concerned of an overlap between the effective date of the standard and implementation date of the requirement could cause inadvertent confusion as to when to calculate the winter season temperature. For example, if the effective date of the standard is 1/1/2023, does an entity calculate the Extreme Cold Weather Temperature to 12/31/2022? Therefore, the MRO NSRF proposes to clarify “through the date the temperature is calculated” to “through the end of the previous winter season of the date the temperature is calculated”.

The MRO NSRF requests clarification on data souce location. Historical hourly temperature data for many project locations is nonexistent. Several of our members have considered National Weather Service data from small airports, but these stations can be many miles away from the project locations. The NSRF requests modification to the language in the definition to the effect of, “the closest NWS site data is adequate for calculating this temperature (ECWT)”.

Additionally, the MRO NSRF request the SDT consider changing the beginning date of records for the Extreme Cold Weather Temperature from 1/1/2000 to 1/1/2005. While there is certainly temperature data on the NOAA NCEI website for most airports located near large population centers that goes back to the 1/1/2000 date, there is abundantly more data available for some more remote areas starting in 2005. This would help entities obtain a more accurate temperature for the local area that generators may be in, which for some generation facilities such as wind or solar farms may be quite remote and several hundred miles away from any major population area.

In consideration of this data calculation, perhaps NERC can work with NOAA’s National Climatic Data Center (NCDC) on setting up this data for download for industry members. In the June 2013 issue of the Bulletin of the American Meteorological Society, “Alternative Climate Normals: Impacts to the Energy Industry”, the article states that NCDC has been expanding its “proactive engagement” with various sectors and has analyzed what data the energy sector requires for climate normals. To ensure Generator Owners and Generator Operators are using the same data, the NSRF would like to propose that NERC and NCDC develop a data set so industry members do not have to manipulate large sets of data. The winter season data set will be over 2,000 data points and currently as proposed over a 20 year span. Forward looking, this data manipulation will require an abundance of resources to complete for new and existing generation resources.

Alternative Climate Normals: Impacts to the Energy Industry in: Bulletin of the American Meteorological Society Volume 94 Issue 6 (2013) (ametsoc.org)

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	No
Document Name	
Comment	
Alliant Energy supports the comments submitted by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to MRO NSRF comments.	
Jamison Cawley - Nebraska Public Power District - 1	
Answer	No
Document Name	
Comment	
NPPD agrees with the definition of as proposed, with the following exceptions:	

Cold Weather Reliability Event definition: we request the definition be modified to the following: *"(1) a forced derate of more than 10% of the **Facility Rating** of the unit and exceeding 20 MWs for longer than four hours in duration;*". We believe the basis should be the Facility Rating of the generator rather than the capacity. We believe this modification would provide additional clarity and provide for a more accurate calculation. Extreme Cold Weather Temperature definition: historical hourly temperature data for many project locations is nonexistent. Several entities have considered National Weather Service data from small airports, but these stations can be many miles away from the facility locations. We request modification to the language in the definition to the effect of, "the closest NWS site data is adequate for calculating this temperature (ECWT)". Also, NPPD requests the SDT consider changing the beginning date of records for the Extreme Cold Weather Temperature from 1/1/2000 to 1/1/2005. While there is certainly temperature data on the NOAA NCEI website for most airports located near large population centers that goes back to the 1/1/2000 date, there is abundantly more data available for some more remote areas starting in 2005. This would help entities obtain a more accurate temperature for the local area that generators may be in, which for some facilities may be quite remote and several hundred miles away from any major population area.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.	
Eric Ruskamp - Lincoln Electric System - 6, Group Name LES	
Answer	No
Document Name	
Comment	

The definition for Extreme Cold Weather Temperature seems overly complicated and will require a lot of data crunching to reach a number that could be attained by looking at lowest recorded temperature in each year, without having to retrieve hourly data and perform statistical analysis.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time	
Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen	
Answer	No
Document Name	
Comment	
ECWT: The EOP-012 standard as written would not have mitgated much of the events that happened during Feb 2021 in the Southern US. It looks like the Standard is written to ensure that Generators are able to operate to the “normal” experienced low temperatures experienced during the winter months. The ECWT definition does not address the “Extreme” cold weather. It specifies something that sounds good, but in reality leaves the “equipment freezes” door wide open: the criterion is that fixed portions of cold-weather sensitive equipment should not freeze when exposed to 0.2% of the coldest winter hours in the past 20 years. To give an example: Dallas, TX got down to -2degF for quite a while during storm Uri – the standard requires protection down to 14degF. This means that for the Dallas area, this standard would have minimal influence during a similar extreme event. ISO-NE supports the recommendation from the SRC Comments that the Standard should consider a period of sustained cold temperatures (e.g., the average of the lowest recorded six hours at a given location) as the ECWT.	

GCWRE: Additionally, the term Generating unit is vague and is open to interpretation. Does this mean each generating unit or is it an entire facility. Depending on the interpretation of unit by a GO, they could declare each unit separate in the large plant with many units which could preclude them from the applicability section of this standard as well as exempt form the CAP requirements outlined in Requirement 6.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The SDT may consider your comment on the term "Generating unit" during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	

The NAGF agrees with creation of the definitions. The NAGF has concerns with the proposed definitions as written.

- The definition of Generator Cold Weather Reliability Event is not clear. Use of the word "apparent" in the definition has the potential to cause disagreements during an audit due to the multiple meanings of the word. It would be better to use a word that has a consistent definition rather than a word with multiple different meanings. Synonyms for apparent include assumed, evident, ostensible, ostensive, presumed, prima facie, putative, reputed, seeming, supposed. Based on this list of words, if an auditor assumes that an outage was caused by freezing based on the timing of the outage the auditor would be correct to expect a CAP for that event. (As written, an auditor can take the position any outage that is assumed to be caused by freezing requires a CAP to be created. Then the CAP must either be implemented, or a declaration made that the CAP will not be implemented.) While we do not believe this is the intent of the SDT, the NAGF asks the SDT to address this potential conflict by replacing the word apparent with a word that provides clearer intent.

• The Generator Cold Weather Reliability Event uses the term “freezing of equipment” and Generator Cold Weather Critical Component uses “susceptible to freezing issue” without clearly defining what is meant. While the SDT has spent a significant amount of time discussing what they mean by freezing, that discussion does not appear to be captured well in this documentation. The NAGF recommends that this issue be clearly explained to ensure that all entities understand what issues are to be addressed. • The SDT has used the Extreme Cold Weather Temperature in the definition of Generator Cold Weather Reliability Event which will cause a Generator Owner to do a CAP under R6. This definition should instead use the term “generator minimum operating temperature as identified in the cold weather plan” to better address reliability. The NAGF agrees with the Technical Rationale document that using the Extreme Cold Weather Temperature treats everyone equally. However, in this case, treating everyone equally does not address the reliability concerns raised in the Joint Inquiry Report. The NAGF explain this position in more detail under question 8.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project. The SDT is using the definition of apparent as defined in the dictionary as “clear or manifest to the understanding”.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES Clean Energy supports comments submitted by NAGF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF.	

LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 6	
Answer	No
Document Name	
Comment	
The defined Extreme Cold Weather Temperature does not result in a temperature that would cause a Generator Cold Weather Reliability Event (as defined by this standard). It should be no higher than the lowest historically recorded temperature for the region.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time.	
Stewart Rake - Luminant Mining Company LLC - 7	
Answer	No
Document Name	
Comment	
The definition of "Extreme Cold Weather Temperature"--though an improvement over the cold weather standard in the previous version of EOP-012, which required continuous operations at the documented lowest hourly temperature experienced at the particular location since Jan. 1, 1975--remains problematic and could exacerbate resource adequacy challenges facing the nation (particularly in the Texas Reliability Entity, Inc. (TRE) region), without actually improving reliability outcomes—i.e., if the costs to achieve these standards prove substantial, the adoption of the standards could contribute to early retirements or cancellations or delays of planned resources, which could harm long-term resource adequacy and thus reliability. The new proposal is still extremely conservative, effectively equating to a 99.8th percentile coldest hourly temperature experienced at the applicable weather station for a resource since 2000, during the months of December, January, and February—in other words, a temperature that is colder than the temperature experienced in 99.8 percent of the total hours studied. In the	

draft Technical Requirements document (NERC's Calculating Extreme Cold Weather Temperatures), the 0.2 percentile lowest temperature for the example weather station was 2 degrees Fahrenheit, which apparently had occurred in only 11 hours in the study period (dating back to January 1, 2000), and those 11 hours seemingly were not contiguous.

A requirement for new resources to operate for 12 consecutive hours, and existing resources to operate for 1 continuous hour, at a temperature experienced so few times in the past 22 years could require the Generator Owner to make significant capital expenditures (e.g., depending on the design specifications of the resource and depending on whether the SDT clarifies the meaning of "freeze protection measures" as recommended by Vistra under Question 5) to prepare for an extremely unlikely future occurrence, without any way for the Generator Owner to recoup the costs. The proposed definition and the accompanying standard based on that definition for new resources (R1) seems especially unworkable and unreasonable, as it would require new resources to operate for 12 consecutive hours at a temperature that would have occurred for one hour on only a handful of (apparently separate) occasions over the past two decades—in other words, new resources would be required to prove they could operate in conditions that have apparently never occurred, at least during the lookback period (i.e., while the temperature would have reached the Extreme Cold Weather Temperature for 1-hour periods at least a few times since 2000, it is unlikely that the Extreme Cold Weather Temperature would have occurred for 12 consecutive hours since 2000). In lieu of making those unrecoverable expenditures in an attempt to prepare their resource to operate in speculative future extended extreme cold temperatures, investors may forego or cancel resource additions. Similarly, an existing Generator Owner that cannot operate for one hour at its Extreme Cold Weather Temperature may decide to retire early in lieu of making significant expenditures to attempt to operate at that temperature for one hour in the future.

Notably, the new proposal is far more conservative than the proposed extreme weather standard under consideration for the TRE region, by the Public Utility Commission of Texas (PUCT). In a pending rulemaking, the PUCT has proposed an extreme cold weather standard based on sustaining operations at either the 95th percentile minimum average 72-hour temperature as published in a recurring study by the balancing authority (which will be filed every 5 years and will examine weather outcomes dating back over 100 years) or the lowest ambient temperature at which the particular resource has experienced sustained operations. While Vistra has urged the PUCT to not adopt the alternative "lowest ambient temperature" standard for a variety of reasons (notably that it may effectively override the 72-hour average standard and impose different weather standards for different resources), and while the PUCT has yet to adopt its final rule establishing its standards, Vistra believes the intent of the "lowest temperature" standard proposed by the PUCT is actually to require resources to maintain weatherization measures that go above and beyond the standard, rather than to supplant the 72-hour average standard. In any event, the PUCT's proposed "lowest temperature" standard would still be preferable to the 0.2 percentile standard proposed by the SDT, since the PUCT standard would take into account the resource's demonstrated capabilities, not require it to sustain operations at a temperature at which it

has never sustained operations, and not require new resources to sustain operations at that temperature for durations and in compounding weather conditions that are extremely unlikely to have any historical precedent.

Vistra urges the SDT to reconsider the proposed 0.2 percentile lowest hourly temperature since Jan. 1, 2000 in favor of something closer to the PUCT standard, i.e., either an average lowest ambient temperature (at the 95th or even 99th percentile) over a specified number of hours (e.g., 12 hours, 24 hours, 72 hours, etc.) since a specified date (e.g., Jan. 1, 2000) or a standard based on actual operations (for existing resources) or design specifications (for new or existing resources). If the SDT were to redefine "Extreme Cold Weather Temperature" to incorporate an average lowest ambient temperature, then the NERC guide for Calculating Extreme Cold Weather Temperature would also need to be modified to develop a methodology for calculating that temperature, or alternatively, the balancing authority for each region (e.g., ERCOT for the TRE region) could be responsible for publishing the applicable average temperatures on some periodicity (e.g., every five years). It may be preferable to have the balancing authority publish that data periodically, since that provides a common reference point for all resources operating in the region.

The definition of "Generator Cold Weather Reliability Event" also should be clarified in a couple of ways. First, the phrase that begins "for which the apparent cause(s)" should be moved up to clarify that it modifies all three paragraphs of the definition (i.e., relating to (1) derates, (2) start-up failures, and (3) forced outages), rather than appearing directly at the end of paragraph (3) without any paragraph break, which could provide the impression that it only modifies that last paragraph. In addition, the definition for paragraph (2) (relating to start-up failures) should be modified to clarify that the term "start-up failure" will have the same meaning that it does for purposes of Generating Availability Data System (GADS) reporting. For instance, the definition could be modified to state that "Generator Cold Weather Reliability Event" means:

"One of the following events, if the apparent cause(s) of that event(s) is due to freezing of equipment within the Generator Owner's control and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit and exceeding 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time, as defined in the instructions for mandatory reporting of startup failures in the Generating Availability Data System; or

(3) a Forced Outage

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time. The SDT is using the definition of apparent as defined in the dictionary as “clear or manifest to the understanding”.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	No
Document Name	
Comment	
The Extreme Cold Weather Temperature definition differs from the language/method in the Public Utility Commission of Texas Project No. 53401 to define the minimum temperature at which a resource is reasonably expected to ensure sustained operation. LCRA offers the following revisions to events 1 and 2 of the Generator Cold Weather Reliability Event definition: (1) a forced derate of more than 10 of the *seasonally adjusted High Sustainable Limit (HSL)* of the unit and exceeding 20 MWs for longer than four hours in duration; (2) a start-up failure where the unit fails to synchronize within *the Balancing Authority’s* specified start-up time; or”	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	

Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	No
Document Name	
Comment	

SIGE is requesting the Standard Drafting Team consider the following recommendations:

For **Generator Cold Weather Reliability Event**:

- As written, bullets 1 and 2 could apply at any time during the year. SIGE is proposing the addition of a qualify to define the applicability of bullets 1 and 2. Additionally, SIGE is proposing increasing 10% to 15% to allow larger units capacity for everyday variances:

Generator Cold Weather Reliability Event: One of the following events ***occurring when the ambient temperature is at or below 32 degrees****:*

(1) a forced derate of more than ***15****% of the total capacity of the unit and or exceeding 20 MWs,* ***whichever is greater****, for longer than four hours in duration;*

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage, for which the apparent cause(s) is due to freezing of equipment within the Generator Owner's control and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature

- In alignment with EEI's comment, SIGE is also voicing concern that use of the term "specified" in bullet 2 is unclear as to whom is responsible or what is determining the 'specifying' of the start-up time.

For **Generator Cold Weather Critical Component**, SIGE believes that the inclusion of the phrase "fixed fuel supply component" in the proposed definition is not clear and supports EEI's proposed definition of "fixed fuel supply component".

Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Dan Roethemeyer - Vistra Energy - 5	
Answer	No
Document Name	
Comment	

The definition of "Extreme Cold Weather Temperature"--though an improvement over the cold weather standard in the previous version of EOP-012, which required continuous operations at the documented lowest hourly temperature experienced at the particular location since Jan. 1, 1975--remains problematic and could exacerbate resource adequacy challenges facing the nation (particularly in the Texas Reliability Entity, Inc. (TRE) region), without actually improving reliability outcomes—i.e., if the costs to achieve these standards prove substantial, the adoption of the standards could contribute to early retirements or cancellations or delays of planned resources, which could harm long-term resource adequacy and thus reliability. The new proposal is still extremely conservative, effectively equating to a 99.8th percentile coldest hourly temperature experienced at the applicable weather station for a resource since 2000, during the months of December, January, and February—in other words, a temperature that is colder than the temperature experienced in 99.8 percent of the total hours studied. In the draft Technical Requirements document (NERC's Calculating Extreme Cold Weather Temperatures), the 0.2 percentile lowest temperature for the example weather station was 2 degrees Fahrenheit, which apparently had occurred in only 11 hours in the study period (dating back to January 1, 2000), and those 11 hours seemingly were not contiguous.

A requirement for new resources to operate for 12 consecutive hours, and existing resources to operate for 1 continuous hour, at a temperature experienced so few times in the past 22 years could require the Generator Owner to make significant capital expenditures (e.g., depending on the design specifications of the resource and depending on whether the SDT clarifies the meaning of "freeze protection measures" as recommended by Vistra under Question 5) to prepare for an extremely unlikely future occurrence, without any way for the Generator Owner to recoup the costs. The proposed definition and the accompanying standard based on that definition for new resources (R1) seems especially unworkable and unreasonable, as it would require new resources to operate for 12 consecutive hours at a temperature that would have occurred for one hour on only a handful of (apparently separate) occasions over the past two decades—in other words, new resources would be required to prove they could operate in conditions that have apparently never occurred, at least during the lookback

period (i.e., while the temperature would have reached the Extreme Cold Weather Temperature for 1-hour periods at least a few times since 2000, it is unlikely that the Extreme Cold Weather Temperature would have occurred for 12 consecutive hours since 2000). In lieu of making those unrecoverable expenditures in an attempt to prepare their resource to operate in speculative future extended extreme cold temperatures, investors may forego or cancel resource additions. Similarly, an existing Generator Owner that cannot operate for one hour at its Extreme Cold Weather Temperature may decide to retire early in lieu of making significant expenditures to attempt to operate at that temperature for one hour in the future.

Notably, the new proposal is far more conservative than the proposed extreme weather standard under consideration for the TRE region, by the Public Utility Commission of Texas (PUCT). In a pending rulemaking, the PUCT has proposed an extreme cold weather standard based on sustaining operations at either the 95th percentile minimum average 72-hour temperature as published in a recurring study by the balancing authority (which will be filed every 5 years and will examine weather outcomes dating back over 100 years) or the lowest ambient temperature at which the particular resource has experienced sustained operations. While Vistra has urged the PUCT to not adopt the alternative "lowest ambient temperature" standard for a variety of reasons (notably that it may effectively override the 72-hour average standard and impose different weather standards for different resources), and while the PUCT has yet to adopt its final rule establishing its standards, Vistra believes the intent of the “lowest temperature” standard proposed by the PUCT is actually to require resources to maintain weatherization measures that go above and beyond the standard, rather than to supplant the 72-hour average standard. In any event, the PUCT’s proposed “lowest temperature” standard would still be preferable to the 0.2 percentile standard proposed by the SDT, since the PUCT standard would take into account the resource’s demonstrated capabilities, not require it to sustain operations at a temperature at which it has never sustained operations, and not require new resources to sustain operations at that temperature for durations and in compounding weather conditions that are extremely unlikely to have any historical precedent.

Vistra urges the SDT to reconsider the proposed 0.2 percentile lowest hourly temperature since Jan. 1, 2000 in favor of something closer to the PUCT standard, i.e., either an average lowest ambient temperature (at the 95th or even 99th percentile) over a specified number of hours (e.g., 12 hours, 24 hours, 72 hours, etc.) since a specified date (e.g., Jan. 1, 2000) or a standard based on actual operations (for existing resources) or design specifications (for new or existing resources). If the SDT were to redefine “Extreme Cold Weather Temperature” to incorporate an average lowest ambient temperature, then the NERC guide for Calculating Extreme Cold Weather Temperature would also need to be modified to develop a methodology for calculating that temperature, or alternatively, the balancing authority for each region (e.g.,

ERCOT for the TRE region) could be responsible for publishing the applicable average temperatures on some periodicity (e.g., every five years). It may be preferable to have the balancing authority publish that data periodically, since that provides a common reference point for all resources operating in the region.

The definition of "Generator Cold Weather Reliability Event" also should be clarified in a couple of ways. First, the phrase that begins "for which the apparent cause(s)" should be moved up to clarify that it modifies all three paragraphs of the definition (i.e., relating to (1) derates, (2) start-up failures, and (3) forced outages), rather than appearing directly at the end of paragraph (3) without any paragraph break, which could provide the impression that it only modifies that last paragraph. In addition, the definition for paragraph (2) (relating to start-up failures) should be modified to clarify that the term "start-up failure" will have the same meaning that it does for purposes of Generating Availability Data System (GADS) reporting. For instance, the definition could be modified to state that "Generator Cold Weather Reliability Event" means:

"One of the following events, if the apparent cause(s) of that event(s) is due to freezing of equipment within the Generator Owner's control and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit and exceeding 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time, as defined in the instructions for mandatory reporting of startup failures in the Generating Availability Data System; or

(3) a Forced Outage.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature

definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time. The SDT is using the definition of apparent as defined in the dictionary as “clear or manifest to the understanding”.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, 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 by reference the comments of the Edison Electric Institute (EEI) for question #2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	No
Document Name	
Comment	
LCRA provides the following comments: The Extreme Cold Weather Temperature definition differs from the language/method in the Public Utility Commission of Texas Project No. 53401 to define the minimum temperature at which a resource is reasonably expected to ensure sustained operation. LCRA offers the following revisions to events 1 and 2 of the Generator Cold Weather Reliability Event definition:	

(1) a forced derate of more than 10 of the seasonally adjusted High Sustainable Limit (HSL) of the unit and exceeding 20 MWs for longer than four hours in duration; (2) a start-up failure where the unit fails to synchronize within the Balancing Authority's specified start-up time; or"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	No
Document Name	
Comment	
We are concerned that the definition of Extreme Cold Weather Temperature will not capture the lower temperatures experienced in February 2021 (the Event). Even if the temperatures experienced during the Event are considered outliers, we do not believe that they should be removed from the dataset. The frequency or intensity of these extreme temperatures occurring in the future may be probabilistically low, but cannot be discounted. If NERC wants the new Standard to address temperatures like those experienced in February 2021, the ECWT definition must yield a result lower than the current definition.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time.	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
For Generator Cold Weather Reliability Event, PNM recommends adding to (1) the cause of derate is within the "freezing of equipment within the Generator Owner's control". This would be similar to the statement in (3).	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project.	
Tony Skourtas - Los Angeles Department of Water and Power - 3	
Answer	No
Document Name	
Comment	
LADWP proposes the following recommendations for the definitions of "Generator Cold Weather Critical Component" and "Generator Cold Weather Reliability Event". • For the definition of "Generator Cold Weather Critical Component" LDWP proposes to update the definition as seen below. This revision provides a concise and objective definition.	

"Any generating unit component or associated fixed fuel supply component, that is under the Generator Owner's control and is susceptible to freezing issues. the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. • Provide clarification for the definition of "Generator Cold Weather Reliability Event" specifically for event 3. As currently written the definition implies the time of the event would be at the temperature of Extreme Cold Temperature or warmer. If event 3 is referring to freezing temperatures meaning colder than the Extreme Cold Weather Temperature, event 3 under this definition should be revised as follows: "(3) a Forced Outage, for which the apparent cause(s) is due to freezing of equipment within the Generator Owner's control and the dry bulb temperature at the time of the event was at or above below the Extreme Cold Weather Temperature."

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Sheila Suurmeier - Black Hills Corporation - 1,3,5,6	
Answer	No
Document Name	
Comment	
BHC agrees with comments submitted by EEI & NAGF	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI and NAGF.	
Micah Runner - Black Hills Corporation - 1	
Answer	No
Document Name	
Comment	
BHC agrees with comments submitted by EEI & NAGF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI and NAGF.	
Josh Combs - Black Hills Corporation - 3	
Answer	No
Document Name	
Comment	
BHC agrees with comments submitted by EEI & NAGF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI and NAGF.	

Claudine Bates - Black Hills Corporation - 6	
Answer	No
Document Name	
Comment	
BHC agrees with comments submitted by EEI & NAGF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI and NAGF.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
Generator Cold Weather Critical Component *The definition of Generator Cold Weather Critical Component does not line up with the team's responses to comments. The proposed definition in the standard is open to interpretation and inconsistent application because it can be read to include equipment that is not listed in the response to comments. NRG proposes the SDT include the list of equipment in the standard definition.* *Extreme Cold Weather Temperature*	

NRG is grateful the SDT simplified the ability for generators to meet these requirements with the latest definition of Extreme Cold Weather Temperature. *However, NRG understands that to meet and validate the Extreme Cold Weather Temperature (ECWT), some units will be required to perform a full reverse-engineering of identified critical systems. This would essentially require removing existing cold weather protection then installing new enhanced protection on these systems to meet the new requirements. The incremental cost differential by doing this instead of simply adding protection onto existing equipment could be cost prohibitive at some sites.* *The definition does not include clarification on accepted data sources for determining extreme temperature. NRG suggests this should be extracted from the newly developed guidance document and inserted into the standard.* *NRG believes that this minimum temperature level should be based upon historical operational performance or design criteria.* *NRG would accept the proposed ECWT definition provided technical, commercial, and operational constraints are accepted under R7.* *Generator Cold Weather Reliability Event* *The definition of Generator Cold Weather Reliability Event is not clear regarding what constitutes an apparent cause. Is this due only to freezing equipment at the generator site? There are many other actual causes for generator derates or start-up failures where freezing equipment may not be the actual cause or simply play a limited role. This should be clarified.*	
Likes 0	
Dislikes 0	

Response
Thank you for your comments. The SDT may consider your comments on the Cold Weather Reliability Event and the Generator Cold Weather Critical Component definitions during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time. The SDT is using the definition of apparent as defined in the dictionary as "clear or manifest to the understanding".

Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	

Generator Cold Weather Critical Component

The definition of Generator Cold Weather Critical Component does not line up with the team's responses to comments. The proposed definition in the standard is open to interpretation and inconsistent application because it can be read to include equipment that is not listed in the response to comments. NRG proposes the SDT include the list of equipment in the standard definition.

Extreme Cold Weather Temperature

NRG is grateful the SDT simplified the ability for generators to meet these requirements with the latest definition of Extreme Cold Weather Temperature.

However, NRG understands that to meet and validate the Extreme Cold Weather Temperature (ECWT), some units will be required to perform a full reverse-engineering of identified critical systems. This would essentially require removing existing cold weather protection then installing new enhanced protection on these systems to meet the new requirements. The incremental cost differential by doing this instead of simply adding protection onto existing equipment could be cost prohibitive at some sites.

The definition does not include clarification on accepted data sources for determining extreme temperature. NRG suggests this should be extracted from the newly developed guidance document and inserted into the standard.

NRG believes that this minimum temperature level should be based upon historical operational performance or design criteria. *NRG would accept the proposed ECWT definition provided technical, commercial, and operational constraints are accepted under R7.* ***Generator Cold Weather Reliability Event*** *The definition of Generator Cold Weather Reliability Event is not clear regarding what constitutes an apparent cause. Is this due only to freezing equipment at the generator site? There are many other actual causes for generator derates or start-up failures where freezing equipment may not be the actual cause or simply play a limited role. This should be clarified.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The SDT may consider your comments on the Cold Weather Reliability Event and the Generator Cold Weather Critical Component definitions during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
"Generator Cold Weather Critical Component" introduces more confusion than it alleviates. For example, what is the definition of "associated fixed fuel supply components"? "Extreme Cold Weather Temperature" introduces unnecessary complexity and undue administrative burdens that do not lead to improved reliability. Reclamation recommends the initial proposal of using the coldest temperature back to 1/1/1975 was less confusing and less of an administrative burden than requiring entities to calculate the lowest .2 percentile of hourly temperatures. For example, climatological data	

from NOAA can only be processed 10 years at a time. For this timeframe, the file is over 55MB in size. Reclamation observed that following the NERC instructions and using a 10-year period of data took over an hour to filter and get the required data. Additionally, the data for several facilities only goes back to 2005, which will limit how much data some facilities can obtain and will automatically result in non-compliance with the proposed required analysis. Other searches yielded a longer period of available data, but from NOAA stations that were not near the facility in question (e.g., 100 miles away) or included major elevation changes (e.g., over 3000 feet and different weather patterns). These discrepancies will result in inaccurate data affecting the relevance of the calculations and again call into question the complicated structure of the proposed calculation method. Reclamation recommends the SDT account for these impacts to reliability as well as the ability to comply with the proposed requirements.

"Generator Cold Weather Reliability Event" introduces unnecessary complexity and provides loopholes for entities to circumvent solutions to the root causes of the cold weather problem FERC is attempting to solve. Reclamation recommends the specification of "10% of total capacity" is unnecessary. The focus should be on whether the derate aggregates to a total exceeding the MW threshold.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event definition during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.

Meaghan Connell - Public Utility District No. 1 of Chelan County - 5, Group Name PUD No. 1 of Chelan County

Answer	No
Document Name	

Comment

While CHPD recognizes the merits of allowing the percentile method, we would recommend adding language to recognize and allow use of minimum temperature data from daily, monthly, or yearly weather record summaries, rather than prescriptively requiring a certain percentile of hourly data. Additionally it should also be noted that some weather station data will not go back to the required 2000 date

and therefore language should be added to allow for flexibility in those instances. Furthermore, some generating plants do not have weather data directly available at the plant, but this data is available at a nearby location. The proximity of the weather site location to the generating plant should be addressed so this aspect is clear to the Generator Owner.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make some of the proposed changes at this time. However, some of your suggestions for clarification may be considered in phase two of the Extreme Cold Weather Standard Development project.	
Lenise Kimes - City and County of San Francisco - 1,5 - WECC	
Answer	No
Document Name	
Comment	
For Generator Cold Weather Critical Component definition, please see modification (italicized - text in brackets describes recommended change) as follows: Any generating unit component or associated fixed fuel supply component, that is under the Generator Owner's *control* [recommend replacing "control" with "ownership"] ***ownership*** and that is susceptible to freezing issues, the occurrence of which would likely lead to a generating unit(s): (1) forced derate of more than 10% of the total capacity of the unit and exceeding 20 MWs for longer than four hours in duration, (2) a start-up failure where the unit fails to synchronize within a specified start-up time, or (3) a Forced Outage.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	No
Document Name	
Comment	
LouisvilleG&E/KU support EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy supports comments submitted by EEI proposing revisions to the proposed definitions.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	

Thomas Foltz - AEP - 5	
Answer	No
Document Name	
Comment	
In regards to the definition of the term “Generator Cold Weather Reliability Event”, the text “for which the apparent cause(s) is due to freezing of equipment within the Generator Owner’s control and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature” is provided *after* the text for (3), which gives the impression (likely unintentional) that it only applies to (3) rather that to (1), (2), and (3) collectively. AEP recommends moving the text so that it instead proceeds (1), (2), and (3), and adding text to make it clear that it indeed applies to all of them collectively. The definition of Generator Cold Weather Critical Component is somewhat circular, as it specifically references the word “component” multiple times, yet it does not clearly state what a “component” itself actually is. The definition could benefit from this added clarity, perhaps similar to that provided in the definition of “Protection System” in the NERC Glossary of Terms. This might be considered either now or in future phases of this project.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project. The SDT is using the definition of apparent as defined in the dictionary as “clear or manifest to the understanding”.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	

PG&E supports the proposed definitions for Phase One (this version) of the Cold Weather project and agrees with the input by EEI and the NAGF that additional clarity is needed which should be completed during Phase Two of the project. Our input of NO for the comment is related to the additional work needed in Phase Two.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI and NAGF.	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3, Group Name OGE Energy	
Answer	No
Document Name	
Comment	
OG&E supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Joe Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	No
Document Name	

Comment	
Xcel Energy supports comments from EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
David Jendras - Ameren - Ameren Services - 3	
Answer	No
Document Name	
Comment	
Ameren agrees with the EEI and the NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI and NAGF.	
Mark Spencer - LS Power Development, LLC - 5	
Answer	No
Document Name	
Comment	
Extreme Cold Weather Temperature ("ECWT"): We do not agree that this definition adds clarity. Temperature, wind velocity, precipitation, and duration are inseparable when evaluating freeze protection measures. The SDT attempts to create a synthetic condition that has not	

occurred in nature. As we describe below, we think a more logical approach would be to select the duration and frequency of occurrence. This procedure links all variables as the naturally exist to establish models that set reliability standards. Setting the temperature first provides little predictive power in a generator's ability to perform under extreme cold weather events. As an example, if the ECWT were 15 degrees at a particular location and had to meet the duration standard for new generators, 12 hours, our analysis shows that the observed temperatures dip below the ECWT for some or all of the duration in almost all scenarios. In many cases, the dip is significant. Therefore, if a generator plans to perform for 12 hours *at the ECWT* it may fail. Additionally, we asked whether the SDT performed analysis to confirm whether an assumed 20 mph wind coincident with the duration was reasonable. The SDT replied that it was a reasonable assumption based on the group's experience. We analyzed the weather data for 27 locations from California to Massachusetts and North Dakota to Florida. In only one location (Boston) did wind and temperatures at or below the ECWT appear correlated.

Rather than specifying a temperature and a duration independently, the better approach would be to allow the Balancing Authorities (BA) to specify the weather scenarios that they use in their planning scenarios. Alternatively, if NERC were to set the standard, a better approach for establishing a continent-wide standard would be to start with a loss-of-load-expectation (LOLE) and work backwards to the combination of temperature, duration, wind, and (perhaps) precipitation that yield the criteria LOLE. As an example, select a reasonable duration – e.g., 12 hours, etc., then calculate the temperature that yields the selected LOLE memorialized in the reliability standard ("Historical Event(s)"). Fiftieth percentile wind speed coincident with these Historical Event(s) are then a derivative of this calculation. Because the effects of precipitation are much more subjective and difficult to quantify, the standard should require generator owners to examine historical precipitation coincident with the Historical Event(s) and document that they have considered the effects of the precipitation and modified their cold weather preparedness plans accordingly. We offer a proposed alternate definition:

*"**Extreme Cold Weather Event Standard –** An(a) observed event(s) with a duration of no less than 12 hours, such that the combination of observed hourly dry bulb temperatures and 50th percentile wind speeds yield a once in XX year probability of occurring at the generator's location based on a review of the historical weather from the period January 1, 2000 through the date the temperature is calculated."*

Generator Cold Weather Critical Component ("Component"): The benefit of defining specific components within a generator that may be susceptible to freezing are evident, but the benefit of applying a MW threshold at the component level is not. This definition does not expressly define a MW threshold but engages a threshold through the definition's reference to a "Generator Cold Weather Reliability Event." In our experience if a component is so fundamental to the operation of the facility that its loss could cause a derate, then it is

critical. Additionally, setting a MW threshold may be counter-productive. As an illustrative example, say a coal plant has six coal mills and only needs five to obtain full output – i.e., the loss of any one mill would not "likely" lead to a derate, so a generator owner could logically conclude that all coal mills could be excluded from the Component definition. Redundant instrumentation, conveyors, etc. may also be excused using similar logic. We propose the following definition: *"**Generator Cold Weather Critical Component** – Any generating unit component or associated fixed fuel supply component that are under the Generator Owner's control and are susceptible to freezing, the occurrence of which would likely lead to a forced outage, derate, failed start or the reliance on redundant or back-up components to maintain output."* **Generator Cold Weather Reliability Event ("Event"):** We do not have any comments to this definition at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT had numerous discussions regarding the ECWT during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make some of the proposed changes at this time. However, some of your suggestions for clarification regarding Extreme Cold Weather Event and Generator Cold Weather Critical Component may be considered in phase two of the Extreme Cold Weather Standard Development project.	
Scott Kinney - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	

Avista supports all three definitions for this first phase, but we also propose additional revisions to the Generator Cold Weather Critical Supply Component and the Cold Weather Reliability Event because additional clarity is needed and that can be addressed during the next phase of this project. (See below)

Generator Cold Weather Critical Supply Component: Use of the undefined term "fixed fuel supply component" within the proposed definition of Generator Cold Weather Critical Component creates confusion. While we support the explanation provided by the SDT in the Technical Rationale, the Technical Rationale has no standing as a compliance document. For this reason, we ask the SDT to consider defining this term within the framework of the next phase of this project. We suggest the following for SDT consideration:

Fixed Fuel Supply Component: Are non-mobile equipment that support the reliable delivery of fuel to the generating unit and under the control the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control would be included. Components that would not be included would be mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location.

Generator Cold Weather Reliability Event: EEI is concerned with the use of the term "specified", as it relates to the start-up time of a generator during cold weather events, because it is unclear clear who would be responsible for specifying the start-up time. Results Based Standards should "define a particular reliability objective or outcome to be achieved. In its simplest form, a results-based requirement has four components: who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome." (NERC Results Based Standards – Performance Based; https://www.nerc.com/pa/Stand/Pages/ResultsBasedStandards.aspx#:~:text=Results%20based%20standards%20are%20standards,the%20NERC%20Standard%20Processes%20Manual.)

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.

Brooke Jockin - Portland General Electric Co. - 1, Group Name Portland General Electric Co.

Answer	No

Document Name	
Comment	
Portland General Electric Company supports the survey response provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	No
Document Name	
Comment	
Avista supports all three definitions for this first phase, but we also propose additional revisions to the Generator Cold Weather Critical Supply Component and the Cold Weather Reliability Event because additional clarity is needed and that can be addressed during the next phase of this project. (See below) **Generator Cold Weather Critical Supply Component:** Use of the undefined term "fixed fuel supply component" within the proposed definition of Generator Cold Weather Critical Component creates confusion. While we support the explanation provided by the SDT in the Technical Rationale, the Technical Rationale has no standing as a compliance document. For this reason, we ask the SDT to consider defining this term within the framework of the next phase of this project. We suggest the following for SDT consideration: **Fixed Fuel Supply Component:** Are non-mobile equipment that support the reliable delivery of fuel to the generating unit and under the control the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the	

fuel delivery system that are under the Generator Owner's control would be included. Components that would not be included would be mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location. **Generator Cold Weather Reliability Event**: EEI is concerned with the use of the term "specified", as it relates to the start-up time of a generator during cold weather events, because it is unclear clear who would be responsible for specifying the start-up time. Results Based Standards should "define a particular reliability objective or outcome to be achieved. In its simplest form, a results-based requirement has four components: who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome." (NERC Results Based Standards – Performance Based;	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
ECWT source data not clearly defined. This could be anything from an employee logging a thermometer value to downloading incomplete data from NOAA. Plus, data may be available and adequate for some generating stations, but for other remote generating station the search for historical data has produced incomplete and/or missing data. Maintaining a rolling minimum value of the lowest winter temperatures (3 months) from 1/1/2000 to current is excessive, especially for 20+ year old plants. Ten years of data from the commercial operation date or ten years ending on the date of adoption of EOP-012-1 would seem sufficient.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make some of the proposed changes at this time. However, some of your suggestions for clarification may be considered in phase two of the Extreme Cold Weather Standard Development project.	
Brian Evans-Mongeon - Utility Services, Inc. - 4	
Answer	No
Document Name	
Comment	
It is unclear why the word “apparent” is used in the definition for Generator Cold Weather Reliability Event. Based on the time-lines provided for the development of a CAP (up to 150 days) there is sufficient time to make a determination of the cause of a Generator Cold Weather Reliability Event. Additionally, without determining the actual cause of an event it would be imposible to develop an effective CAP. The use of a subjective term like “apparent” opens up all events to interpretation during compliance review and should be removed from the definition.	
Likes 1	Illinois Municipal Electric Agency, 4, Todd Mary Ann
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	No
Document Name	
Comment	

Consider modifying the following term definitions:

-Extreme Cold Weather Temperature:

- Change “Extreme Cold Weather Temperature” to “Extreme Cold Weather Target Temperature” to discern between the lowest extreme cold weather temperature and the extreme cold weather temperature adjusted for the lowest 0.2 percentile of the hourly temperatures.

-Generator Cold Weather Critical Component:

- Change “Any generating unit component or associated fixed fuel supply component…” to “Any component or associated fixed fuel supply component…” to recognize non-traditional units (e.g., solar) that do not have traditional electrical generators and to capture unit auxiliary components.

-Generator Cold Weather Reliability Event:

- Suggestion #1: (2) a start-up failure where the unit fails to synchronize within a specified start-up time:

o Define specified start-up time duration that constitutes a start-up failure.

o Define the entity that would determine the start-up time duration and failure.

- Suggestion #2: (3) a Forced Outage”,”:

o Change comma to a semi-colon.

o Note: As written, the paragraph that follows “(3) a Forced Outage” appears to be uniquely linked to Event (3) rather than representing language specified for Events (1), (2) and (3).

Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	No
Document Name	
Comment	

The phrase from #3 from the Generator Cold Weather Reliability Event defintion – " for which the apparent cause(s) is due to freezing of equipment within the Generator Owner's control and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature" seems to apply to points #1 and #2 and therefore should be included in these or moved to the opening statement 'One of the following events for which the apparent cause…'

Also, within the same highlighted phrase, 'freezing of equipment' is specified, but not freezing of onsite fuel supplies or process fluids? Is fuel exempt? Lube oil? Ammonia? If these are included, this should be stated and further clarification/extension of the term 'freezing' may also be warranted to state something to the effect of 'changing fuel or process fluid properties such that critical processes are limited'.

FE also supports EEI's comments on the proposed definitions.

EEI supports all three definitions for this first phase, but we also propose additional revisions to the Generator Cold Weather Critical Component and the Cold Weather Reliability Event because additional clarity is needed and that can be addressed during the next phase of this project. (See below.)

Generator Cold Weather Critical Component: Use of the undefined term "fixed fuel supply component" within the proposed definition of Generator Cold Weather Critical Component creates confusion. While we support the explanation provided by the SDT in the Technical Rationale, the Technical Rationale has no standing as a compliance document. For this reason, we recommend defining this term within the framework of the next phase of this project. We suggest the following:

Fixed Fuel Supply Component: Are non-mobile equipment that support the reliable delivery of fuel to the generating unit and under the control the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the

fuel delivery system that are under the Generator Owner's control would be included. Components that would not be included would be mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location. Generator Cold Weather Reliability Event: EEI is concerned with the use of the term "specified", as it relates to the start-up time of a generator during cold weather events, because it is unclear clear who would be responsible for specifying the start-up time. Results Based Standards should "define a particular reliability objective or outcome to be achieved. In its simplest form, a results-based requirement has four components: who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome."	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No
Document Name	
Comment	
Talen Energy Marketing LLC supports Talen Generation's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to Talen Generation's comments.	
Donna Wood - Tri-State G and T Association, Inc. - 1	

Answer	No
Document Name	
Comment	
Tri-State mostly agrees however, the concept of mobile vs. fixed fuel should be incorporated into the Generator Cold Weather Critical Component definition.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project.	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
Talen Energy supports in large part the inputs of the NAGF on this topic, and goes further by recommending that the, "Extreme Cold Weather Temperature," should be the historical worst-case temperature (WCT, or DBT-plus-20 mph, as described above). Setting a statistical cutoff for winterization (proposed in Rev. 2 of EOP-012-1 to be the 0.2 percentile of the winter season) is fundamentally unsuitable. EOP-012-1 in its present form implies that the blackouts, deaths and damage caused by Winter Storm Uri are acceptable, so long as they are experienced only during the coldest 43 hours per decade (or much longer, due to the time needed to troubleshoot, thaw and restart units with freeze-up forced outages). This is precisely when BES reliability is most important, however, becoming a life-or-death matter.	

Where will the power come from during those 43 (or more) hours? The answer presently is that it will be supplied by older generation plants, designed to operate through all winter storms and not just some of them. As the years pass and these facilities are replaced by 0.2 percentile units, however, occasional devastating blackouts will become the norm, not as a ghastly error but according to plan.

The argument that some EPC firms use the 0.2 percentile cutoff has no validity. This is the cause of the problem, not the cure. One must not depend on old-reliable units to save the day and allow cutting corners in the quest to become the low bidder. It is NERC's job to put a halt to such practices, not enshrine them as the law of the land.

It is impossible moreover to slice matters so finely as a fraction of a percentile, since freeze protection is subject to great uncertainty due to frequent design and installation errors by contractors. Protection that is thought to address all weather except the coldest 43 hours per decade might in fact allow freeze-up for a much longer duration. Nor is there need for extreme exactitude, since the cost difference between designing for the 0.2 percentile temperature and historical worst-case conditions is negligible in comparison to the harm being prevented.

The DBT-plus-20 mph approach proposed above provides a simple alternative for GOs having difficulty identifying the worst-historical WCT. This would not be an excessively conservative criterion, since winter storms that cause grid emergencies tend to be by those combining low DBT values with high wind speed. Also, in our experience heat tracing/insulation systems rarely provide the specified protection, much less containing enough safety margin to cover 0.19 percentile-and-lower events. In summary:

{C}- The mission of Project 2021-07 is to ensure BES reliability during ALL credible winter storm conditions.

{C}- Historical worse-case conditions are credible; they happened before, so they can happen again.

{C}- Therefore the design criterion must be the historical worst-case weather conditions, which to be meaningful must be wind and temperature-based (WCT) and relying soly on temperature (DBT).

The definition of Generator Cold Weather Critical Components and the way in which this term is used in R1 and R3 indicate an obligation to list freeze-susceptible equipment at the component level and identify their individual temperature capabilities. Doing so for every outdoors pipe and tube containing water or steam (even large-bore systems can freeze if left static for too long during downtime periods), plus their associated instruments and equipment, would be extremely and unnecessarily burdensome. It should be sufficient to address elements at the system level, where freeze protections was implemented on this basis. That is, only a single entry would be needed for all outdoors water and steam piping if it was heat-traced and insulated under a single contact, using conditions of X degrees F DBT and Y mph wind speed.

The Generator Cold Weather Reliability Event definition should be revised and Guidance material should be added, as shown below. There are presently many forced outages under part 3 of this currently proposed definition (and EOP-012-1 in its present form will not prevent them), because the vulnerability being discussed is related to WCT for conventional plants, not DBT. Generator Cold Weather Reliability Event (1) a forced derate of more than 10% of the total capacity of the plant and exceeding 20 MW for the plant, for longer than four hours in duration, due to freezing of equipment within the Generator Owner's control. or (2) a start-up failure in which the unit fails to synchronize within the extreme cold weather start-up time declared for R3.5 [add this to R3.5, there is presently no target in this respect], due to freezing of equipment within the Generator Owner's control. Guidance: "Precautionary derates, e.g. ramping-down CTGs to minimum load during blizzards to help avoid clogging the inlet air filters, are not counted as forced derates so long as this limitation has been documented in accordance with R3.5 of EOP-012-1."

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event and Generator Cold Weather Critical Component definitions during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.

Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	

DTE Electric supports NAGF comments provided for this project	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF's comments.	
Diana Torres - Imperial Irrigation District - 6	
Answer	No
Document Name	
Comment	
IID disagrees that the 0.2 percentile is not overly conservative, IID recommends to use 0.5 or 1.0.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT had numerous discussions regarding this point during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT elects to not make the proposed change at this time.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	No
Document Name	
Comment	

The current definitions as written leave ample room for interpretation. While this is often desired, we believe that in this instance they do not provide enough clarity to the requirements of EOP-012. The specific concerns with the current verbiage are as follows:

Generator Cold Weather Critical Component: While the open-endedness of "any generating unit component" is desired as it allows the Generator Owner to identify critical components on a per-unit basis, it does not appear to include any "common" equipment shared between units. Examples would include service water, instrument air, ammonia, ash handling, common bus isolation breakers/switches, etc. The proposed modification to the definition is: "Any generating unit component or associated fixed fuel supply component, to include any critical equipment shared between multiple units (i.e. Balance of Plant (BOP) and/or Common equipment), that is under the Generator Owner's control and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event."

Extreme Cold Weather Temperature: If the current method to calculate is implemented, NERC should consider coordinating with the National Oceanic and Atmospheric Administration to ensure dry bulb temperature data is available from 1/1/2000 through an indefinite future date. As currently written the requirement to use "the hourly temperatures measured" seems a bit excessive. Given the inherent difficulty of compiling a dataset containing > 49,000 data points and then calculating the lowest 0.2 percentile, we recommend modifying the definition to include daily minimum temperatures from the same time period. This modification would reduce the size of the dataset significantly (down to ~2076 total days) and should not change the resulting Extreme Cold Weather Temperature by any significant statistical margin given that the daily minimum will contain the hourly minimums.

Lastly, the requirement to use a fixed data start date of 01/01/2000 means the dataset will grow by approximately 2,160 data points if using the hourly metric while only 90 data points if using the daily minimum metric. Therefore, it is our recommendation to use a 20-year rolling time period if staying with the hourly metric.

If the hourly metric is to remain, a proposed modification to the definition would be: "The temperature equal to the lowest 0.2 percentile of the actual hourly temperatures measured in December, January, and February from the previous 20 years immediately prior to the date the temperature is calculated."

The preferred modification would be to abandon the hourly metric in favor of the daily minimum metric. This proposed modification to the definition is: “The temperature equal to the lowest 0.2 percentile of the actual daily minimum temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.”

Generator Cold Weather Reliability Event: Pertaining to event type 2 that may constitute a Generator Cold Weather Reliability Event:
2. “A start-up failure where the unit fails to synchronize within a specified start-up time”: Who specifies the start-up time? Per the draft Technical Rationale and Justification for EOP-012-1, start-up failures are defined using a modified version of the GADS definition in order to ensure consistency across all jurisdictions for this standard. Our concern stems from the language in R2 that references the GADS definition of “specified start-up time” without providing the additional clarification found in the 2022 GADS Data Reporting Instructions. Our recommendation is to modify this subsection as follows: “A start-up failure where the unit fails to synchronize within a specified start-up time. The specified start-up time period for each unit is determined by the GO/GOP based on the condition of the unit at the time of start-up.”

In addition this defined term is not clear in relation to what constitutes “apparent cause(s) is due to freezing of equipment” in the draft definition. AECI urges the standard drafting team to consider removing the word “apparent” from the definition as the apparent cause may not be the actual cause after further investigation.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The SDT may consider your comment on the Cold Weather Reliability Event and Generator Cold Weather Critical Component definitions during phase two of the Extreme Cold Weather Standard Development project. The SDT had numerous discussions regarding the Extreme Cold Weather Temperature definition during the Standard Development process and due to the comments received by industry in the initial and second ballot being split on this matter, the SDT disagrees with making the proposed change at this time.

Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6

Answer	No
Document Name	
Comment	
This standard should be clearly targeted to those entities not designed to run in below freezing conditions, that operate in those areas where it is possible to have freezing events. Those entities operating in environments where freezing is a yearly expectation, and where they are designed to operate in freezing weather should be exempt. We feel that, due to poor performance of certain generators in specific areas, the whole fleet of generators is being targeted for this poor performance. This comes at a significant cost and effort by smaller organizations who do not have these risks.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project. Please note that the SDT performed spot reviews of existing fleets of generating assets that currently operate in extreme cold weather and to the extent that these units are employing current industry best practices, the SDT feels that the additional compliance documentation in meeting the proposed new standard will not be significant in either cost or effort.	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	

LaKenya VanNorman - LaKenya VanNorman On Behalf of: Aaron Casto, Florida Municipal Power Pool, 6; Carl Turner, Florida Municipal Power Agency, 5, 3, 4, 6; Chris Gowder, Florida Municipal Power Agency, 5, 3, 4, 6; Dan O'Hagan, Florida Municipal Power Agency, 5, 3, 4, 6; David Owens, Gainesville Regional Utilities, 1, 5, 3; Jade Bulitta, Florida Municipal Power Agency, 5, 3, 4, 6; Neville Bowen, Ocala Utility Services, 3; - LaKenya VanNorman, Group Name Florida Municipal Power Agency (FMPA)	
Answer	Yes
Document Name	
Comment	
We agree with the new proposed definitions, but still believe the definition of Generator Cold Weather Reliability Event should either remove the phrase “apparent cause(s)” or reword it to be “for which the apparent cause(s), as determined by the entity during RCA or internal investigation, is due to…”. Without definition, the term “apparent” is subjecetive and open to different interpretations. It should be removed, or clarified that it is as defined by the entity.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	
Comment	
Exelon agrees with the proposed definitions. Exelon supports EEI's comments regarding the benefit of making clarifying enhancements to the definitions during the next phase of this project.	

Submitted on behalf of Exelon, Segments 1 & 3	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Also see response to EEI.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	Yes
Document Name	
Comment	
"Please see comments submitted by the Edison Electric Institute"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to Edison Electric Institute.	
Alison Mackellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	

Constellation specifically notes support for the use of percentiles in the definition of Extreme Cold Weather Temperature, and support for the use of the term "apparent" in the definition Generator Cold Weather Reliability Event. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT will note the support for both the percentile approach and the support for “apparent” in phase two ongoing discussions. The SDT is using the definition of apparent as defined in the dictionary as “clear or manifest to the understanding”.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
Constellation specifically notes support for the use of percentiles in the definition of Extreme Cold Weather Temperature, and support for the use of the term "apparent" in the definition Generator Cold Weather Reliability Event. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT will note the support for both the percentile approach and the support for “apparent” in phase two ongoing discussions. The SDT is using the definition of apparent as defined in the dictionary as “clear or manifest to the understanding”.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
To clarify the definition of “Generator Cold Weather Reliability Event”, we recommend the language “for which the apparent cause(s) is due to freezing of equipment within the Generator Owner’s control and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature” be moved to the beginning of the definition to clarify that it applies to derates, start-up failures, AND forced outages.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider this modification during phase two of the Extreme Cold Weather Standard Development project.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
The SDT intended for the “Extreme Cold Weather Temperature” to be recorded at or near the plant site, but the location is not included in the definition. We suggest the SDT consider enhancing the definition (incorporating a location) such as the following:	

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures neasured in December, January, and February from 1/1/2000 through the date the temperature is calculated at one of the following locations: a. At the generating plant site (preferred location). b. At the closest official meterological location. c. At an official weather recording site within the generating plant surrounding area.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company aligns with EEI's comments an offers some suggestions for additional clarity. For Generator Cold Weather Critical Component, we suggest clarification would be beneficial to specifically state in the definition that it includes equipment for which the GO has responsibility to provide freeze protection. Southern also proposes modifying the definition of Generator Cold Weather Reliability Event to be when the dry-bulb temperature was above the generator's stated minimum operating temperature in R3 and not at or above the Extreme Cold Weather Temperature. Requiring a CAP for freezing issues below an already stated capability would only create additional administrative burden with no reliability benefit.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. The SDT may consider your comments during phase two of the Extreme Cold Weather Standard Development project.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
We agree with the definitions and our program will inform the correct action to maintain reliability at Extreme Cold Weather Temperature, prepare for a Cold Weather Event and identify Cold Weather Critical Components. We can communicate our concerns for generator availability using the communication requirements.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
John Liang - Snohomish County PUD No. 1 - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	

Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Gerry Adamski - Cogentrix Energy Power Management, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Scott McGough - Georgia System Operations Corporation - 3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Donna Johnson - Oglethorpe Power Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Sean Steffensen - IDACORP - Idaho Power Company - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Glenn Pressler - CPS Energy - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Devon Tremont - Taunton Municipal Lighting Plant - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
The SDT appreciates your review.	
Michael Watt - Oklahoma Municipal Power Authority - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
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; John Nierenberg, 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, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	

3. Is the revised Applicability Section language clear? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
The applicabilty should exempt those generation facilities that are designed and operated in below freezing weather, or that employ technology that is not affected by extreme cold weather.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	
DTE Electric supports NAGF comments provided for this project	
Likes 0	
Dislikes 0	
Response	

Thank you for the comment, please see response to NAGF.	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
The Applicability section is clear, but insufficient. There cannot be meaningful progress on enhancing BES wintertime reliability without proper Planning Assessments and real-time resource adequacy evaluations, and these goals cannot be achieved if RCs, BAs and TOPs continue to use a DBT yardstick for WCT-related phenomena. The DBT-based databases presently being used create a false sense of resource adequacy, as was demonstrated during Winter Storm Uri. It may not be possible for EOP-012-1 to set requirements for RCs, BAs and TOPs, since they were omitted from the SAR, but NERC should launch a parallel project so that they use accurate, WCT-based temperature capability data (or DBT-plus-20 mph), and EOP-012-1 should set the stage by manfdating collection of this information.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The drafting team will not take action on your comment but will pass your suggestion for a parallel project onto NERC for consideration. The drafting team would also remind industry that any entity or individual may propose the development of a new or modified Reliability Standard by submitting a completed SAR to the NERC Reliability Standards staff.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	

a. 4.2.1.1 That commits or is obligated to serve a Balancing Authority load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement; This should not be included in the Applicability section as per FAC-001-3, R4.3, all BES generators must be within a BA metered boundary.

b. The inclusion of blackstart resources is redundant with the inclusion I3 of the BES definition and therefore should be removed.

c. The cold weather exclusion should be removed from the applicability section and instead a requirement should be added to require the GO to prove operability in cold weather through analysis/studies.

Likes 0	
Dislikes 0	

Response

Thank you for the comment. The SDT is not making substantive changes to the applicability section but has added clarifying language that may address some of your concerns. FAC-001 concerns interconnection requirements and is not related to the commitment to run during freezing temperatures, which is part of the elements of applicability. The use of the term Blackstart Resources is for clarity notwithstanding any potential redundancies.

Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6

Answer	No
Document Name	

Comment

Talen Energy Marketing LLC supports Talen Generation's comments.

Likes 0	
Dislikes 0	

Response

Thank you for the comment, please see response to Talen Generation.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	No
Document Name	
Comment	

FE supports EEI comments on the proposed changes to Functional Entities and fully support removing the phrase “pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement”. The proposed edits read:

Applicability:

4.1 Functional Entities:

4.1.1. Generator Owner

4.1.2. Generator Operator

4.2. Facilities: The term “generating unit” subject to these requirements means:

4.2.1. A Bulk Electric System generating unit that commits or is obligated to serve a Balancing Authority load excluding a Bulk Electric System generating unit that is not committed or obligated to operate at or below thirty-two (32) degrees Fahrenheit (zero degrees Celsius) for any continuous run of more than four hours. The exclusion continues to apply should when such BES generator be called upon to operate for more than four hours in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below 32 degrees Fahrenheit.

4.2.2. That is identified as a Blackstart Resource.

Likes 0	
Dislikes 0	
Response	

Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	No
Document Name	
Comment	
We recommend the SDT consider establishing a defined winter season under 4.2.1.1.1 or placing responsibility for defining a winter season on the Balancing Authority rather than relying on the “typically not available at or below thirty-two degrees” language.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team had previously determined (based on multiple comments on Draft One) to not define the winter season or add the responsibility for the BA to determine a winter season. Therefore, the drafting team has decided to continue with the current Draft Two paradigm.	
Brian Evans-Mongeon - Utility Services, Inc. - 4	
Answer	No
Document Name	
Comment	
The Applicability is unnecessarily complicated. section 4.2.1.2: Is it the intent to not automatically include generators that meet the BES definition Inclusions I2 and I4? Blackstart Resources (I5) are already included as BES Generators per the definition of the BES and it is redundant and/or confusing to call them out specifically.	

Section 4.2.1.1.1 uses the term "typically" which is subjective and unclear. If this is going to be used as an exclusion to the standard it should be definitive. Alternatively, the limited generators that this will be applicable to can utilize this type of exclusionary languge in their Cold Weather Prep Plan and as justification for not implementing a CAP to address issues as necessary.	
Likes 1	Illinois Municipal Electric Agency, 4, Todd Mary Ann
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Mark Spencer - LS Power Development, LLC - 5	
Answer	No
Document Name	
Comment	

The proposed definition of a BES generating unit is one "[t]hat commits or is obligated to serve a Balancing Authority load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangements." This definition assumes that an obligation "to serve" exists. The majority of generating assets in the United States are located in regions overseen by Independent System Operators or Regional Transmission Operators and do not have obligations "to serve," unless pursuant to a state contract or stretching the definition – a Reliability Must Run contract. They may have an obligation to supply energy under specified rules on a seasonal or annual basis if they clear a capacity auction. If the intent of this rule is to apply only to generation owned by a vertically integrated utility subject to federal and/or state laws that obligate the utility to provide service, to a publicly owned generator subject to municipal rules regarding an obligation to serve, or to a generating unit that has contractually committed to supply energy for a long term period to a Balancing Authority or through state and or/federal contract, the definition may not be infirm. However, we encourage the SDT to clarify the purpose and intent of this section.

With regard to R4.1.1.1, we note that, as drafted, a generator that is typically unavailable above 32 degree Fahrenheit – e.g., a mothballed unit in south Florida – would be required to comply with the standard. The first criteria should be whether a location experiences sufficient freezing conditions to warrant applicability. If it does not, then there is no compliance obligation – e.g., San Diego. If it does, then the availability criteria should apply. We also recommend replacing "typical" with the ECWT to create bright line criteria. In addition, we do not understand the need to specify the duration of a dispatch schedule. In our experience, failures of peaking resources are more likely to occur

during start-up than during operations. BAs typically dispatch peaking plants after the nadir of the local temperature in the overnight hours – i.e., morning ramp, thus we recommend SDT change the definition to: *"The term excludes a Bulk Electric System generating unit that is: (i) in a location where the Extreme Cold Weather Temperature is calculated to be greater than 32 degree Fahrenheit (0 degree Celsius) or (ii) in a location where the Extreme Cold Weather Temperature is calculated to be lower than or equal to 32 degree Fahrenheit (0 degree Celsius) and the unit is typically not available in these freezing conditions."*	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
PG&E supports the comments provided by EEI and the NAGF, and has the following additional concern and recommendations related to NAGF's second input; The currently proposed wording in Section 4.2.1.1.1 is not clear what is required if a Generator Owner's calculated Extreme Cold Weather Temperature is above 32 degrees Fahrenheit. To address this concern, PG&E recommends the addition of "or a generator that has determined its Extreme Cold Weather Temperature be above 32 degrees" in the first sentence of 4.2.1.1.1 to help correct this issue.	
Likes 0	
Dislikes 0	

Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation disagrees with 4.2.1.1 and disagrees with the exclusion in 4.2.1.1.1. Reclamation disagrees with narrowing the scope of applicability based on entity choice of units that operate. Generating units that have no potential to freeze, e.g., hydroelectric plants that are housed indoors in climate-controlled buildings, should be excluded. Generating units that may be called on to assist in the mitigation of any Emergency should not be excluded because the failure of these units to operate properly in an Emergency exacerbates the Emergency. Reclamation asserts that exempting these units is a clear loophole in the intent of ensuring reliability during cold weather. Both exclusions will decrease BES reliability.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team believes that the exclusions as developed during team meetings is consistent with the intent stated in the Joint Report. Additionally, the drafting team has added clarifying language for the final ballot, but is not making substantive changes to the current language.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	

A clear statement also needs to be made that this standard is not applicable to a generator with the Extreme Cold Weather temperature above 32 degrees.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
A clear statement also needs to be made that this standard is not applicable to a generator with the Extreme Cold Weather temperature above 32 degrees	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Claudine Bates - Black Hills Corporation - 6	
Answer	No
Document Name	
Comment	

BHC still needs clarity on what the SDT is attempting to say by the 4.2.1.1 BA portion.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Josh Combs - Black Hills Corporation - 3	
Answer	No
Document Name	
Comment	
BHC still needs clarity on what the SDT is attempting to say by the 4.2.1.1 BA portion.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Micah Runner - Black Hills Corporation - 1	
Answer	No
Document Name	
Comment	
BHC still needs clarity on what the SDT is attempting to say by the 4.2.1.1 BA portion.	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Sheila Suurmeier - Black Hills Corporation - 1,3,5,6	
Answer	No
Document Name	
Comment	
BHC still needs clarity on what the SDT is attempting to say by the 4.2.1.1 BA portion.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Tony Skourtas - Los Angeles Department of Water and Power - 3	
Answer	No
Document Name	
Comment	
LDWP recommends this requirement to be region specific applicable only to areas that are susceptible to Extreme Cold Weather. In addition, require Generator Owners that plan to operate generating units in areas susceptible to Extreme Cold Weather to specify the need for continuous operation at or below the Extreme Cold Weather Temperature.	
Likes 0	
Dislikes 0	

Response	
Thank you for the comment. The Joint Report recommends national standards be developed on an industry-wide basis, which was the model followed in the SAR. The standard drafting team is not developing regional specific standards or applicability.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	No
Document Name	
Comment	
In order to capture the comparable OATT in non-US jurisdictions, we suggest revising 4.2.1.1 as follows: That commits or may be committed or is obligated to serve a Balancing Authority load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement or rules; The IESO strongly believes that the standard should apply to all the generating units whose capacity is being counted on, including those providing sufficient reserve to withstand a cold weather event. The IESO suggests considering the concept of requiring the GO to declare to the BA/RC a unit will not run during the winter, unless the BA/RC requests it to run during an emergency.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	No
Document Name	
Comment	

In Section 4.2.1.1.1 the language 'typically not available' is subjective and unclear. If an exclusion is allowed, the Balancing Authority should determine which resources are excluded from the EOP-012 standard and requirements. Further, excluding resources from NERC reliability standards but allowing those same resources to be dispatched in the conditions (below 32 degrees) which this standard addresses, is contrary to the purpose of this exact NERC standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team believes that the exclusions, as developed during team meetings, is consistent with the intent stated in the Joint Report. Additionally, the drafting team has added clarifying language for the final ballot, but is not making substantive changes to the current language. Your suggestion will be forwarded onto the drafting team for consideration in Phase Two.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	No
Document Name	
Comment	
In Section 4.2.1.1.1 the language 'typically not available' is subjective and unclear. If an exclusion is allowed, the Balancing Authority should determine which resources are excluded from the EOP-012 standard and requirements. Further, excluding resources from NERC reliability standards but allowing those same resources to be dispatched in the conditions (below 32 degrees) which this standard addresses, is contrary to the purpose of this exact NERC standard.	
Likes 0	
Dislikes 0	
Response	

Thank you for the comment. The drafting team believes that the exclusions, as developed during team meetings, is consistent with the intent stated in the Joint Report. Additionally, the drafting team has added clarifying language for the final ballot, but is not making substantive changes to the current language. Your suggestion will be forwarded onto the drafting team for consideration in Phase Two.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES Clean Energy supports comments submitted by NAGF.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to NAGF.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF has two concerns with the applicability section. The first concern is that the language used in section 4.2.1.1 is unclear as to the meaning. Every generator has an interconnection agreement with their Transmission Owner (and possibly other third parties) which is under the OATT. The NAGF is concerned that the lack of clarity in this statement will lead to assumptions that differ across the registered entities and the regulators. Clarity would be provided by clearly stating that this standard is applicable to generators that are accepted in a capacity market rather than the vague wording used in the current draft.	

The second concern is that it is not clear what is required of a Generator Owner if the calculated Extreme Cold Weather Temperature is above 32 degrees Fahrenheit. To address this concern, a clear statement that this standard is not applicable to a generator with the Extreme Cold Weather Temperature above 32 degrees is needed. The addition of "or a generator that has determined its Extreme Cold Weather Temperature to be above 32 degrees" in the first sentence of 4.2.1.1.1 will correct this issue.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The drafting team has added clarifying language for final ballot.	
Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen	
Answer	No
Document Name	
Comment	
ISO-NE believes that if the GOs are left to their own declaration of being "typically" available and/or if they are required to upgrade a unit or facility with freeze protection, this could create an unfair market advantage to those entities that choose not to freeze protect their units and facilities for "commercial" reasons. During extreme weather events markets may account for these situations reflected in the real-time prices. Thus, ISO-NE suggests the SDT consider the concept of requiring the GO to declare to the BA/RC a unit will not run during the winter so the GO cannot take advantage of high prices unless the BA/RC requests it to run during an emergency.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. Additionally, the drafting team has added clarifying language for the final ballot, but is not making substantive changes to the current language. Your suggestion will be forwarded onto the drafting team for consideration in Phase Two.	

Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	No
Document Name	
Comment	
Alliant Energy supports the comments submitted by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to MRO NSRF.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	No
Document Name	
Comment	
The Applicability Section in the revised standard seems to indicate applicability to individual generating units. During the Q&A session of the WebEx presentation held on 8/16/22, a question was asked that led to discussion around this term, and it was indicated that the requirements, when considering I4 generating facilities, should be applied to entire wind farm (time mark 1:48:14 in the August 16, 2022 webinar recording). Considering this discrepancy, the MRO NSRF requests the Standard Drafting Team provide clarifying language in the Applicability Section of the Standard. Proposed language: 4.2 Facilities: : For purposes of this standard, the term “generating unit” subject to these requirements means: 4.2.1 For generating facilities included in the BES under:	

4.2.1.1 Inclusion I2, an individual generating unit 4.2.1.2 Inclusion I3, any Blackstart Resources identified in the Transmission Operator's restoration plan. 4.2.1.3 Inclusion I4, the aggregated dispersed power producing resources with a total capacity of 75 MVA or greater. and 4.2.2 That commits or is obligated to serve a Balancing Authority load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement; 4.2.3 The term excludes a Bulk Electric System generating unit that is typically not available at or below thirty-two (32) degrees Fahrenheit (zero degrees Celsius) for any continuous run of more than four hours. The exclusion applies even when such BES generator has been called to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below 32 degrees Fahrenheit.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team determined that referencing "Bulk Electric System" or "BES" from the glossary of terms is sufficient to capture Inclusions I2-I4.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	No
Document Name	
Comment	

MidAmerican Energy supports the MRO NSRF comments for this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to MRO NSRF.	
Steven Sconce - EDF Renewable Energy - 5	
Answer	No
Document Name	
Comment	
EDF supports the comments submitted by NAGF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to NAGF.	
Imane Mrini - Austin Energy - 6	
Answer	No
Document Name	
Comment	
As this is written, it says that a "generation unit" is a BES unit that is committed/obligated AND is identified as a blackstart resource. Because 4.2.1 doesn't indicate that the unit be "one of the following" and because there's no OR between 4.2.1.1 and 4.2.1.2, there is an implied AND. This suggests that, for the purpose of this standard, only blackstart units need to winterize. We suspect that this is not the intent of the	

document, so we would recommend changing 4.2.1 to say "A Bulk Electric System generating unit that conforms to either 4.2.1.1 or 4.2.1.2 below:". I would also move 4.2.1.1.1 to become 4.2.2. so that it doesn't impede or obscure the either/or choice of 4.2.1.1/4.2.1.2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, the team has made clarifying changes to the final ballot.	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	No
Document Name	
Comment	
MISO supports the comments submitted by the ISO/RTO Council Standards Review Committee (IRC SRC) except where noted.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to IRC SRC.	
Shannon Ferdinand - Decatur Energy Center LLC - 5	
Answer	No
Document Name	
Comment	
Capital Power supports the North American Generators Forum (NAGF) response to this question.	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment, please see response to NAGF.	
Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3	
Answer	No
Document Name	
Comment	
Madison Gas and Electric supports the comments from the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Adam Lee - MGE Energy - Madison Gas and Electric Co. - 4	
Answer	No
Document Name	
Comment	
Madison Gas and Electric supports the comments of the MRO NSRF	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	

Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	No
Document Name	
Comment	
In regards to the proposed Section 4.2 Facilities definition: In order to ensure a reliable response from generators that may be called upon by the Balancing Authorities during Capacity and Energy Emergencies, we recommend eliminating the exception for generators that do not operate during the winter season except when called upon by the Balancing Authority to be available during Capacity Emergencies or Energy Emergencies. Our recommended change to the language would be "The term excludes those generators that are not normally expected to operate during the winter season under normal and/or emergency conditions."	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
The revised Applicability Section is less clear than the version presented for the first ballot. Specifically, it is not clear what BES generating units the SDT intends to include with respect to the load-serving requirement and listed contractual qualifiers in Section 4.2.1.1. Invenergy recommends that the Applicability be returned to the language used for the first ballot.	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment. The drafting team determined to retain the second ballot language, but has included clarified language for the final ballot.	
George Brown - Acciona Energy North America - 5	
Answer	No
Document Name	
Comment	
Acciona Energy supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Whitney Wallace - Calpine Corporation - 5 - WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
WGRs may not meet the requirements of 4.2.1.1.1 if ambient dry bulb air temperature is below 32 degrees Fahrenheit and wet precipitation (i.e., rain) is being deposited on the turbine blades. Additionally, it is not clear why certain types of units would be exempt from the Standard. NERC should clearly specify the types of units that it intends exempt from this Standard and explain why exempting these units is not unduly discriminatory.	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment. The drafting team believes that the exclusions, as developed during team meetings, is consistent with the intent stated in the Joint Report. Additionally, the drafting team has added clarifying language for the final ballot, but is not making substantive changes to the current language.	
Russell Noble - Cowlitz County PUD - 3	
Answer	No
Document Name	
Comment	
Cowlitz agrees with comments proviced by North American Generator Forum and Utility Services.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to NAGF.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	No
Document Name	
Comment	
Agree with comments provided by Russell Noble.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment, please see response to Russell Noble.	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	

The SRC supports the addition of Part 4.2.1.1, as the language provides a clear and measurable criteria. However, the SRC believes it could be improved. Specifically, Section 4.2.1.1 refers to a unit *obligated to serve a BA load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement*. Specifically, an OATT does not define capacity obligations of units in RTO regions. Those obligations appear in: (i) other agreements approved by FERC; (ii) state law in states with vertically integrated utilities (such as the requirement for the state PUC to find units receiving rate base treatment "used and useful"); or (iii) market rules. As written, the Standard's language would override (or, at best, conflict with) those other requirements. As a result, to avoid that problem the SRC recommends revising the language as follows (to cover RTOs, ERCOT and Canadian entities):

That commits or may be committed or is obligated to serve Balancing Authority load pursuant to a tariffed obligation, state requirement as defined by relevant electric regulatory authority, other contractual arrangement, rules or regulations;

Section 4.2.1.1.1 goes on to inadvertently undo the sweep of Section 4.2.1.1 by stating the Standard, "...excludes a [BES] generating unit... typically not available at or below thirty-two (32) degrees...for any continuous run of more than four hours [and] applies even when such BES generator has been called to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below 32 degrees Fahrenheit." To correct this drafting issue, the SRC recommends adding the following language at the beginning of Section 4.2.1.1.1:

"For any generating unit not covered by Section 4.2.1.1,…"

Within Section 4.2.1.1.1, using the phrase "typically not available at or below thirty-two degrees…" allows a GO to self-proclaim a unit not "typically" available in the winter. The SRC believes the SDT should revisit this language and provide more measurable parameters. Otherwise,

a GO could make itself available one day and not the next. It also provides no parameters for what constitutes "typical;" *i.e.*, more than 50% of the time, 25%, etc.? As written, a Regional Entity could not audit a unit exemption. [GOs should not be able to choose to not weatherize a unit and then choose to offer that unit to take advantage of high prices during the winter season. Thus, the SRC suggests the SDT consider the concept of requiring the GO to declare to the BA/RC a unit will not run during the winter so the GO cannot take advantage of high prices *unless* the BA/RC requests it to run during an emergency.] ***** **** Please note:*** *MISO is not a party to this paragraph in response to this Question. PJM also has concerns with this response.*	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot, but is not making substantive changes to the current language.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC has signed on to ACES comments, please see their responses.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to ACES.	
Rhonda Jones - Invenergy LLC - 5	
Answer	No

Document Name	
Comment	
The revised Applicability Section is less clear than the version presented for the first ballot. Specifically, it is not clear what BES generating units the SDT intends to include with respect to the load-serving requirement and listed contractual qualifiers in Section 4.2.1.1. Invenergy recommends that the Applicability be returned to the language used for the first ballot.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team determined to retain the second ballot language, but has included clarified language for the final ballot.	
LaKenya VanNorman - LaKenya VanNorman On Behalf of: Aaron Casto, Florida Municipal Power Pool, 6; Carl Turner, Florida Municipal Power Agency, 5, 3, 4, 6; Chris Gowder, Florida Municipal Power Agency, 5, 3, 4, 6; Dan O'Hagan, Florida Municipal Power Agency, 5, 3, 4, 6; David Owens, Gainesville Regional Utilities, 1, 5, 3; Jade Bulitta, Florida Municipal Power Agency, 5, 3, 4, 6; Neville Bowen, Ocala Utility Services, 3; - LaKenya VanNorman, Group Name Florida Municipal Power Agency (FMPA)	
Answer	No
Document Name	
Comment	
The applicability will not be consistently applied due to references to contracts for serving load that are not related to NERC standards (i.e. 4.2.1.1 “That commits or is obligated to serve a Balancing Authority load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement.”). In addition, the use of the phrase “not typically available at or below thirty-two (32) degrees” in 4.2.1.1.1 is highly subjective and open to interpretation.	
Likes 0	
Dislikes 0	

Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
The term “generating unit” causes confusion in how the standard applies to renewable resources. Although an attempt to clarify is provided, the term “generating unit” is often interpreted to refer to individual turbines or invertors and not the aggregate facility. Enel therefore supports the MRO NSRF proposed language to further clarify section 4.2. In particular, Enel supports the MRO NSRF suggestion to clarify that the term “generating unit” refers to Inclusion I4, the aggregated dispersed power producing resources with a total capacity of 75 MVA or greater. In addition, Enel also recommends that this clarification be consistent with how this issue was addressed in other standards such as PRC-024.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team determined that referencing “Bulk Electric System” or “BES” from the glossary of terms is sufficient to capture Inclusions I2-I4.	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	No
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	Yes
Document Name	
Comment	
In regards to the proposed Section 4.2 Facilities definition: In order to ensure a reliable response from generators that may be called upon by the Balancing Authorities during Capacity and Energy Emergencies, we recommend eliminating the exception for generators that do not operate during the winter season except when called upon by the Balancing Authority to be available during Capacity Emergencies or Energy Emergencies. Our recommended change to the language would be “The term excludes those generators that are not normally expected to operate during the winter season under normal and/or emergency conditions.”	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team believes that the exclusions, as developed during team meetings, is consistent with the intent stated in the Joint Report. Additionally, the drafting team has added clarifying language for the final ballot, but is not making substantive changes to the current language.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	

Comment	
Southern Company agrees that the Applicability Section language is clear.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
While Avista supports the Applicability Section, it is overly complicated and offer the following non-substantive changes for consideration:	

4.2 Facilities: The term “generating unit” subject to these requirements means:

4.2.1 Bulk Electric System (BES) generating unit(s) that commit or are obligated to serve a Balancing Authority load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement, excluding BES generating unit(s) that are that are not committed or obligated to operate at or below thirty-two (32) degrees Fahrenheit (zero degrees Celsius) for any continuous run of more than four hours. The exclusion applies even when such BES generating unit(s) have been called to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below thirty-two (32) degrees Fahrenheit (zero degrees Celsius).

4.2.2 Blackstart Resource(s) that are identified in the Transmission Operator’s system restoration plan.

Likes 0	
Dislikes 0	

Response

Thank you for the comment. The drafting team has added clarifying language for the final ballot.

Brooke Jockin - Portland General Electric Co. - 1, Group Name Portland General Electric Co.

Answer	Yes
Document Name	

Comment

Portland General Electric Company supports the survey response provided by EEI.

Likes 0	
Dislikes 0	

Response

Thank you for the comment, please see response to EEI.	
Scott Kinney - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
While Avista supports the Applicability Section, it is overly complicated and offer the following non-substantive changes for consideration: 4.2 Facilities: The term "generating unit" subject to these requirements means: 4.2.1 Bulk Electric System (BES) generating unit(s) that commit or are obligated to serve a Balancing Authority load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement, excluding BES generating unit(s) that are that are not committed or obligated to operate at or below thirty-two (32) degrees Fahrenheit (zero degrees Celsius) for any continuous run of more than four hours. The exclusion applies even when such BES generating unit(s) have been called to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below thirty-two (32) degrees Fahrenheit (zero degrees Celsius). 4.2.2 Blackstart Resource(s) that are identified in the Transmission Operator's system restoration plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	

Ameren agrees with the EEI and the NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI and NAGF.	
Joe Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports comments from EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3, Group Name OGE Energy	
Answer	Yes
Document Name	
Comment	
OG&E supports the comments submitted by EEI.	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
AEP would like to express its support of EEI's response to this question and adds supportive comments below. AEP believes the Applicability section could be improved by making it clear that a Blackstart Resource, for purposes of this standard, are *only* those resources identified as such by the RTO (serving as the BA). 4.2.1.1.1 states that "The term excludes a Bulk Electric System generating unit that is typically not available…", however we believe the phrase "typically not available" is ambiguous. Rather, we believe a threshold should be established in this section, similar to that provided in MOD-026 and MOD-027. We believe clarity is also needed within 4.2.1 to make it clear if the bullets are to be collectively considered as an "and" or as an "or" clause.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot that may address some of your concerns. Blackstart Resource is a defined term in the NERC Glossary of Terms, which recognizes the TOP's role to identify such units for its restoration plans. The drafting team believes bringing in an RTO/BA to identify what Blackstart Resources are subject to the winterization requirements adds an unwarranted complexity to the intent, and may unnecessarily constrict the applicability of the proposed standard.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	

Answer	Yes
Document Name	
Comment	
Dominion Energy supports the EEI comments and recommend modifications to the proposed Applicability section.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	Yes
Document Name	
Comment	
LouisvilleG&E/KU support EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	

Comment	
Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Alison Mackellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	

Answer	Yes
Document Name	
Comment	
PNM supports EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, 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	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #3.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Dan Roethemeyer - Vistra Energy - 5	
Answer	Yes
Document Name	

Comment	
Vistra has no comments on the Applicability Section language.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	
Comment	
Exelon agrees the Applicability Section language is clear, we do also support the enhancements proposed by the EEI. Submitted on behalf of Exelon, Segments 1 & 3	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	

Comment	
SIGE agrees with the changes to the revised Applicability Section.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Stewart Rake - Luminant Mining Company LLC - 7	
Answer	Yes
Document Name	
Comment	
Vistra has no comments on the Applicability Section language.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Michelle Amarantos - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	

APS agrees with EEI's recommendation to remove references to the OATT and "other contractual agreement" language as it introduces complexity with little value. We agree with EEI's proposed revisions to the Applicability section.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
While Avista supports the Applicability Section, it is overly complicated and offer the following non-substantive changes for consideration: 4.2 Facilities: The term "generating unit" subject to these requirements means: 4.2.1 Bulk Electric System (BES) generating unit(s) that commit or are obligated to serve a Balancing Authority load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement, excluding BES generating unit(s) that are that are not committed or obligated to operate at or below thirty-two (32) degrees Fahrenheit (zero degrees Celsius) for any continuous run of more than four hours. The exclusion applies even when such BES generating unit(s) have been called to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below thirty-two (32) degrees Fahrenheit (zero degrees Celsius). 4.2.2 Blackstart Resource(s) that are identified in the Transmission Operator's system restoration plan.	
Likes 0	
Dislikes 0	
Response	

Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	

EEI recommends the references to the OATT and "other contractual arrangement" language be removed because such language adds little to the requirement from results-based Reliability Standard standpoint. Additionally, while EEI supports the Applicability Section, it is overly complicated and offer the following non-substantive changes for consideration:

Applicability:

4.1 Functional Entities:

4.1.1. Generator Owner

4.1.2. Generator Operator

4.2. Facilities: The term "generating unit" subject to these requirements means:

4.2.1. A Bulk Electric System (BES) generating unit **t**hat commits or is obligated to serve a Balancing Authority load exclud**ing** a BES generating unit **that is not committed or obligated to operate** at or below thirty-two (32) degrees Fahrenheit (zero degrees Celsius) for any continuous run of more than four hours. The exclusion **continues to apply should** such BES generating unit be called **upon** to **operate for more than four hours in order to** assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below 32 degrees Fahrenheit.

4.2.2. That is identified as a Blackstart Resource.

Likes 0	
Dislikes 0	

Response	
Thank you for the comment. The drafting team has added clarifying language for the final ballot.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
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; John Nierenberg, 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, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michael Watt - Oklahoma Municipal Power Authority - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Devon Tremont - Taunton Municipal Lighting Plant - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Glenn Pressler - CPS Energy - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Sean Steffensen - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Lenise Kimes - City and County of San Francisco - 1,5 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Meaghan Connell - Public Utility District No. 1 of Chelan County - 5, Group Name PUD No. 1 of Chelan County	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Donna Johnson - Oglethorpe Power Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Scott McGough - Georgia System Operations Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 6	
Answer	Yes
Document Name	
Comment	

Thank you for your support.	
Likes 0	
Dislikes 0	
Response	
Eric Ruskamp - Lincoln Electric System - 6, Group Name LES	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jamison Cawley - Nebraska Public Power District - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Carl Pineault - Hydro-Qu?bec Production - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Young - Tenaska, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Gerry Adamski - Cogentrix Energy Power Management, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Foung Mua, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Wei Shao, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; - Tim Kelley, Group Name SMUD / BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
John Liang - Snohomish County PUD No. 1 - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE understands the intent of the SDT to include generation units that operate in different types of market structures, including the ERCOT region. Texas RE recommends, however, clarifying Section 4.2.1.1, as it could benefit additional detail and clarity. The use of the term "to serve BA load" could lead to confusion for how the standard applies to generation-only BAs in the Eastern or Western interconnection as well as to ancillary services.

Texas RE recommends the type of market structure be removed from the Facilities section and the applicability focus on the reliability need.

Texas RE suggests the following proposed language, which focuses on the reliability needs that the generation units provide:

4.2.1 A Bulk Electric System generating unit:

4.2.1.1 That commits, or is committed by the BA, to provide energy to serve BA load, or;

4.2.1.2 That commits, or is committed by the BA or Reserve Sharing Group, to provide ancillary services to the BA or RSG for frequency control, frequency response, voltage control, or Operating Reserves, or;

4.2.1.3 That commits, or is committed by the BA or Reserve Sharing Group, to maintain BES elements within System Operating Limits, or;

4.2.1.4 Is identified as a Blackstart Resource.

4.2.2 The term excludes ….. (may want to include an example, such as a unit that is in a seasonal mothball status and only runs during summer months)

If the SDT feels that it is critical to maintain the market structure within the applicability section, Texas RE proposes the following language:

4.2.1 A Bulk Electric System generating unit:

4.2.1.1 That commits, or is committed by the BA, to provide energy under market processes, or; 4.2.1.2 That commits, or is committed by the BA or Reserve Sharing Group, to provide ancillary services to the BA or RSG for frequency control, voltage control, or Operating Reserves, or; 4.2.1.3 Is obligated to serve a Balancing Authority load pursuant to an Open Access Transmission Tariff (OATT) or other contractual arrangement, or; 4.2.1.4 Is identified as a Blackstart Resource. 4.2.2 The term excludes …..

Likes 0	
Dislikes 0	

Response
Thank you for your comment, the team has made some clarifying changes to the applicability section for final ballot that may address some of your concerns. The SDT declines to make substantive changes to the language, but may consider your additional recommendations in phase two.

Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	
Document Name	

Comment
“Please see comments submitted by the Edison Electric Institute”

Likes 0	
Dislikes 0	

Response
Thank you for your comment, please see response to EEI.

4. Do you support the SDT proposed 12-hour timeframe to require new Generation units to be capable of performing at or below the Extreme Cold Weather Temperature? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.	
Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
Invenergy recommends striking “continuous” from the requirement to reflect the fact that certain generation technologies, including wind and solar generators, have variable, not continuous output. Even with the recommended edit above, the capability requirement does not account for all relevant circumstances. Two examples illustrate the issue: (1) Solar generators are not capable of operating in a 12-hour period that extends beyond daylight hours. (2) The capability of storage generators is constrained by their duration. Further, the performance expectations of all generators should be the same, and the separate performance criteria proposed for new and existing generating units in R1 and R2 respectively set precedents for the unequitable treatment of Generator Owners based on a fluid effective date of the Standard. If the SDT decides to regulate new and existing generators differently, then the SDT should establish a definition for new and existing units not based on the effective date of the Requirement, but rather the age of the generating unit.	
Likes 0	
Dislikes 0	
Response	

The team has reviewed your comment and believes that making the suggested modification will substantially change the Standard that was approved by the industry. During the drafting process of the Standard, the team discussed this at length and intended to have a higher expectation for new generation.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC has signed on to ACES comments, please see their responses.	
Likes 0	
Dislikes 0	
Response	
See response to ACES comments.	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	
The proposed Standard requires generating units to perform at or below the ECWT for twelve hours. The SRC does not think this language, as written, suffices because it limits a unit's obligation to winterize to run for only a twelve-hour period. For example, in PJM, units with capacity obligations are required to perform whenever called upon by PJM during a declared system emergency and are subject to very high penalties if they do not perform during the hours when they can be called upon. Yet, as written, the standard would potentially erode if not create an ambiguity with that requirement by requiring a lesser only 12 hour run requirement.	

The SRC recognizes this issue needs further discussion and is willing to coordinate with the SDT to address the issue.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments received and will evaluate during Phase Two of the project.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	No
Document Name	
Comment	
Agree with comments provided by Russell Noble.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to Russell Noble.	
Russell Noble - Cowlitz County PUD - 3	
Answer	No
Document Name	
Comment	
Cowlitz is concerned how this will be demonstrated by compliance documentation short of actual performance, although the intent is reasonable. The requirement should recognize good faith effort in design, but clearly define the action the responsible entity should take if the design proves inadequate in during operations.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The RSAW will address the method of compliance and determine how compliance will be measured.	
Whitney Wallace - Calpine Corporation - 5 - WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
R1 requires the GO to operate for no less than 12 continuous hours at the ECW Temperature with wind speeds up to 20 mph. First, wind speed should be specified as "sustained wind speed". Second, ***this question infers GOs will be required to operate reliably below the ECW Temperature***. That is not the R1 requirement. R1 does not require operating at below the ECW. Furthermore, consistent with the comment in Response 3, NERC should clearly specify the types of units that it intends to exempt from this Standard and explain why exempting these units is not unduly discriminatory.	
Likes 0	
Dislikes 0	
Response	
The team has reviewed your comment and believes that making the suggested modification is unnecessary as "sustained" is implicit in the 20 mph requirement. The SDT question should not have included the statement "or below" with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide "capability to operate…at the Extreme Cold Weather Temperature[.]"	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	

Comment
Invenergy recommends striking “continuous” from the requirement to reflect the fact that certain generation technologies, including wind and solar generators, have variable, not continuous output. Even with the recommended edit above, the capability requirement does not account for all relevant circumstances. Two examples illustrate the issue: (1) Solar generators are not capable of operating in a 12-hour period that extends beyond daylight hours. (2) The capability of storage generators is constrained by their duration. Further, the performance expectations of all generators should be the same, and the separate performance criteria proposed for new and existing generating units in R1 and R2 respectively set precedents for the unequitable treatment of Generator Owners based on a fluid effective date of the Requirement. If the SDT decides to regulate new and existing generators differently, then the SDT should establish a definition for new and existing units not based on the effective date of the Requirement(s), but rather the age of the generating unit.

Likes 0	
Dislikes 0	

Response
The freeze protection measures must provide the level of protection that would allow operation for 12 continuous hours if the sun were to shine that long or the wind blow that long. The SDT believes that to set a point in time for the industry to use to differentiate between existing and new units is appropriate and the team has chosen the effective date of the standard as that differentiating date.

Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations

Answer	No
Document Name	

Comment
It is our recommendation that wind should not be included in the design criteria for new Generation units unless added to ECWT definition. The reasoning behind this recommendation is due to the inconsistencies between R1 and R3. The language in R1 states that the GO *shall*

include a concurrent 20 MPH wind speed in the design criteria for new generating units. Whereas the language in R3 states that the cold weather preparedness plan *may* include measures used to reduce the cooling effects of wind. Is the GO required to include wind in their calculations for all stations and all scenarios? If not, then what is the benefit for including this in the design criteria for new generating units? Furthermore, the 20 MPH value seems to be somewhat arbitrary. Please provide additional clarification as to how this value was derived and the rationale behind this derivation.	
Likes 0	
Dislikes 0	
Response	
The key recommendation identifies wind and freezing precipitation as examples of weather conditions to consider during the design of new generating units and modifications to existing plants. Realizing the many differences in weather conditions that generator sites face across the Regions, the 2021-07 SDT developed language to provide additional context and detail around these weather conditions, while allowing flexibility for site-specific circumstances. The requirement language considers wind at a specific rate when designing new facilities. As far as including/specifying a wind criterion for existing units, the SDT determined that it is difficult to apply a wind specification on already-constructed facilities, where most of the facility components have a fixed physical location and orientation, versus ability of taking wind into account for design and construction of new units. To address the cooling effects of wind on existing generating units, the SDT proposes utilization of actual experience at existing generating unit facilities (e.g., best locations for installing wind breaks that mitigated past freezing issues). The proposed R3 requires documenting freeze protection measures, which may include those measures used to reduce the cooling effects of wind necessary to protect against heat loss. The Technical Rational has been modified to clarify why 20 MPH was selected.	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	No
Document Name	
Comment	
MISO supports the comments submitted by the ISO/RTO Council Standards Review Committee (IRC SRC).	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment, please see response to IRC SRC.	
Steven Sconce - EDF Renewable Energy - 5	
Answer	No
Document Name	
Comment	
EDF believes that it is extremely difficult to apply a “one-size-fits-all” strategy to the timeframe. As an example, the R1 definition refers to twelve (12) continuous hours which is unrealistic during winter period (in cold climates) for inverter based resources (Photovoltaic – PV and Battery Energy Storage System – BESS), i.e., 12 hours of sunlight are not available for PV generation, and many BESS units are only rated for 4 hours. PV and BESS would be producing less than 12 hours during these months on a normal basis. Wind resource, unlike PV and BESS, is unpredictable and we cannot guarantee 12 hours, since the production time will depend of wind availability. We recommend defining a timeframe based on conventional and another for renewables (wind may need to be separate from solar and battery storage)	
Likes 0	
Dislikes 0	
Response	
The freeze protection measures must provide the level of protection that would allow operation for 12 continuous hours if the sun were to shine or the wind were to blow for that period.	
Carl Pineault - Hydro-Qu?bec Production - 1,5	
Answer	No
Document Name	
Comment	

For some Canadian entites, units already operate in cold weather annually from November to March. These requirements represent and added administrative burden.	
Likes 0	
Dislikes 0	
Response	
SDT appreciates your comment. Please note that the SDT performed spot reviews of existing fleets of generating assets that currently operate in extreme cold weather, and to the extent that these units are employing current industry best practices, the SDT feels that the additional compliance documentation in meeting the proposed new standard will not be significant in either cost or effort.	
Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen	
Answer	No
Document Name	
Comment	
ISO-NE believes that new generation units be capable of performing “Continuously” at the ECWT. The requirement should also include the 20 mph wind speed on exposed critical equipment.	
Likes 0	
Dislikes 0	
Response	
SDT had discussions on the length of time and believes 12 hours is an appropriate timeframe for new units. As far as including/specifying a wind criterion for existing units, the SDT determined that it is difficult to apply a wind specification on already-constructed facilities, where most of the facility components have a fixed physical location and orientation, versus ability of taking wind into account for design and construction of new units. To address the cooling effects of wind on existing generating units, the SDT proposes utilization of actual experience at existing generating unit facilities (e.g., best locations for installing wind breaks that mitigated past freezing issues). The	

proposed R3 requires documenting freeze protection measures, which may include those measures used to reduce the cooling effects of wind necessary to protect against heat loss.	
LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 6	
Answer	No
Document Name	
Comment	
Cold weather performance needs to be sustained for the duration of a weather event. Historically, extreme weather events have lasted more than 12 hours. Hence, equipment should be expected to operate continuously at a stated level, albeit at a level below nameplate. Operating for 12 hours only delays onset of problems without ensuring mitigation of reliability impacts.	
Likes 0	
Dislikes 0	
Response	
SDT had discussions on the length of time and believes 12 hours is an appropriate timeframe.	
Stewart Rake - Luminant Mining Company LLC - 7	
Answer	No
Document Name	
Comment	
As a general principle, Vistra believes that the requirements for existing and new resources should be substantively similar, such that neither has a material cost burden or advantage over the other. With that said, the 12-hour standard is not inherently unreasonable, in itself, ***if*** the term “Extreme Cold Weather Temperature” is defined in a less conservative manner, such as the 99th percentile minimum average ambient temperature over some timeframe (e.g., 12 to 72 hours) since a specified date (e.g., Jan. 1, 2000) at the nearest weather station. However, based on the current, very conservative proposed definition of Extreme Cold Weather Temperature, which effectively equates to a 99.8th percentile lowest hourly temperature recorded at the nearest weather station since Jan. 1, 2000, it may not be economically feasible for a new Generation unit to achieve 12-hours of sustained operations at that temperature, based on current design specifications for the	

particular type of resource. The costs of achieving 12-hours of sustained operations at a 1-hour 99.8th percentile standard could be cost-prohibitive and cause investors to cancel planned investments, which, in turn, would be detrimental to resource adequacy, as described in response to Question 2. If a 12-hour operations standard will be required, then the definition of Extreme Cold Weather Temperature should also be tied to historical temperatures over at least a continuous 12-hour timeframe. The Extreme Cold Weather Temperature definition, as currently framed, looks only at a single hourly temperature in the lowest 0.2 percentile since Jan. 1, 2000 and then requires a new resource to prove that it can operate at that temperature for at least 12 hours *and* at 20 mph winds. As noted under Question 2, in the draft Technical Requirements document, the example 0.2 percentile temperature had only ever occurred in 11 separate hours since 2000. Thus, there is no basis under the historical data underlying that definition of Extreme Cold Weather Temperature to require a new resource to prove it can operate for 12 consecutive hours at a temperature that apparently has not occurred in the past 22 years for 12 consecutive hours. Thus, as described under Question 2, Vistra would recommend using an average temperature over a period of hours that at least matches (if not exceeds) the required hours for which the resource must sustain operations at that temperature (and would recommend setting the percentile at something less conservative than the lowest 0.2 percentile/99.8th percentile). If the Extreme Cold Weather Temperature definition is not changed as proposed, then new resources should not be required to prove sustained operations at that temperature for more than one hour. In addition, Requirement R1 allows a new resource to submit a declaration if it cannot satisfy the 12-hour operation requirement, but it is not clear what happens in that instance. The standard should clarify what standard will be imposed if a new resource declares that it cannot meet the standard in the requirement (e.g., 12 hours). Will the resource be held to a lower standard consistent with its design specifications? Will that lower standard relate to the applicable cold weather temperature at which the resource must sustain operations or the number of hours for which the resource must sustain operations or both? Will the Technical Feasibility Exception process be used?	
Likes 0	
Dislikes 0	
Response	
During the drafting process of the Standard, the team discussed this at length. Therefore, the team believes that making the suggested modification will substantially change the Standard that was approved by the industry.	
Dan Roethemeyer - Vistra Energy - 5	
Answer	No

Document Name	
Comment	

As a general principle, Vistra believes that the requirements for existing and new resources should be substantively similar, such that neither has a material cost burden or advantage over the other. With that said, the 12-hour standard is not inherently unreasonable, in itself, ***if*** the term "Extreme Cold Weather Temperature" is defined in a less conservative manner, such as the 99th percentile minimum average ambient temperature over some timeframe (e.g., 12 to 72 hours) since a specified date (e.g., Jan. 1, 2000) at the nearest weather station. However, based on the current, very conservative proposed definition of Extreme Cold Weather Temperature, which effectively equates to a 99.8th percentile lowest hourly temperature recorded at the nearest weather station since Jan. 1, 2000, it may not be economically feasible for a new Generation unit to achieve 12-hours of sustained operations at that temperature, based on current design specifications for the particular type of resource. The costs of achieving 12-hours of sustained operations at a 1-hour 99.8th percentile standard could be cost-prohibitive and cause investors to cancel planned investments, which, in turn, would be detrimental to resource adequacy, as described in response to Question 2. If a 12-hour operations standard will be required, then the definition of Extreme Cold Weather Temperature should also be tied to historical temperatures over at least a continuous 12-hour timeframe. The Extreme Cold Weather Temperature definition, as currently framed, looks only at a single hourly temperature in the lowest 0.2 percentile since Jan. 1, 2000 and then requires a new resource to prove that it can operate at that temperature for at least 12 hours *and* at 20 mph winds. As noted under Question 2, in the draft Technical Requirements document, the example 0.2 percentile temperature had only ever occurred in 11 separate hours since 2000. Thus, there is no basis under the historical data underlying that definition of Extreme Cold Weather Temperature to require a new resource to prove it can operate for 12 consecutive hours at a temperature that apparently has not occurred in the past 22 years for 12 consecutive hours. Thus, as described under Question 2, Vistra would recommend using an average temperature over a period of hours that at least matches (if not exceeds) the required hours for which the resource must sustain operations at that temperature (and would recommend setting the percentile at something less conservative than the lowest 0.2 percentile/99.8th percentile). If the Extreme Cold Weather Temperature definition is not changed as proposed, then new resources should not be required to prove sustained operations at that temperature for more than one hour.

In addition, Requirement R1 allows a new resource to submit a declaration if it cannot satisfy the 12-hour operation requirement, but it is not clear what happens in that instance. The standard should clarify what standard will be imposed if a new resource declares that it cannot meet the standard in the requirement (e.g., 12 hours). Will the resource be held to a lower standard consistent with its design specifications? Will

that lower standard relate to the applicable cold weather temperature at which the resource must sustain operations or the number of hours for which the resource must sustain operations or both? Will the Technical Feasibility Exception process be used?	
Likes 0	
Dislikes 0	
Response	
During the drafting process of the Standard, the team discussed this at length. Therefore, the team believes that making the suggested modification will substantially change the Standard that was approved by the industry.	
Tony Skourtas - Los Angeles Department of Water and Power - 3	
Answer	No
Document Name	
Comment	
LDWP recommends this requirement to be region specific applicable only to areas that are susceptible to Extreme Cold Weather. In addition, require Generator Owners that plan to operate generating units in areas susceptible to Extreme Cold Weather to specify the need for continuous operation at or below the Extreme Cold Weather Temperature.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments received and will evaluate during Phase Two of the project.	
Sheila Suurmeier - Black Hills Corporation - 1,3,5,6	
Answer	No
Document Name	
Comment	

BHC does not feel 12 hours is an adequate amount of time once a new unit has gone commercial, dependent upon when that commercial date was achieved. Hypotehtically, if the unit achieved commercial operation during spring/summer, therefore, the unit may not have had a chance for capability testing during winter/extreme temperatures.	
Likes 0	
Dislikes 0	
Response	
SDT had discussions on the length of time and believes 12 hours is an appropriate timeframe.	
Micah Runner - Black Hills Corporation - 1	
Answer	No
Document Name	
Comment	
BHC does not feel 12 hours is an adequate amount of time once a new unit has gone commercial, dependent upon when that commercial date was achieved. Hypothetically, if the unit achieved commercial operation during spring/summer, therefore, the unit may not have had a chance for capability testing during winter/extreme temperatures.	
Likes 0	
Dislikes 0	
Response	
SDT had discussions on the length of time and believes 12 hours is an appropriate timeframe.	
Josh Combs - Black Hills Corporation - 3	
Answer	No
Document Name	
Comment	

BHC does not feel 12 hours is an adequate amount of time once a new unit has gone commercial, dependent upon when that commercial date was achieved. Hypothetically, if the unit achieved commercial operation during spring/summer, therefore, the unit may not have had a chance for capability testing during winter/extreme temperatures.	
Likes 0	
Dislikes 0	
Response	
SDT had discussions on the length of time and believes 12 hours is an appropriate timeframe.	
Claudine Bates - Black Hills Corporation - 6	
Answer	No
Document Name	
Comment	
BHC does not feel 12 hours is an adequate amount of time once a new unit has gone commercial, dependent upon when that commercial date was achieved. Hypothetically, if the unit achieved commercial operation during spring/summer, therefore, the unit may not have had a chance for capability testing during winter/extreme temperatures.	
Likes 0	
Dislikes 0	
Response	
SDT had discussions on the length of time and believes 12 hours is an appropriate timeframe.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	

The 12-hour timeframe imposes a larger performance burden on new fossil generation since many renewable technologies are unlikely to meet this benchmark in the winter period as the nature of their operation is less than 12 continuous hours. In addition, renewable technology such as wind turbines cannot operate in certain winter conditions (freezing precipitation, high winds) allowing for technical exemptions. Since these IRRs could potentially be exempted under a technical exception, this creates a disadvantage for new thermal generators further slants the market playing field by giving one type of technology a competitive advantage over another type of technology.

NRG also *has concerns with the language around the exclusion for technical, operational, and commercial reasons. Clarity is needed as to what are acceptable criteria for these exclusions as this will be subject to interpretation.*

Likes 0	
Dislikes 0	

Response

SDT had discussions on the length of time and believes 12 hours is an appropriate timeframe. The freeze protection measures must provide the level of protection that would allow operation for 12 continuous hours if the sun were to shine or the wind were to blow for that period.

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

Answer	No
Document Name	

Comment

The 12-hour timeframe imposes a larger performance burden on new fossil generation since many renewable technologies are unlikely to meet this benchmark in the winter period as the nature of their operation is less than 12 continuous hours. In addition, renewable technology such as wind turbines cannot operate in certain winter conditions (freezing precipitation, high winds) allowing for technical exemptions. Since these IRRs could potentially be exempted under a technical exception, this creates a disadvantage for new thermal generators further slanting the market playing field by giving one type of technology a competitive advantage over another type of technology.

NRG also *has concerns with the language around the exclusion for technical, operational, and commercial reasons. Clarity is needed as to what are acceptable criteria for these exclusions as this will be subject to interpretation.*	
Likes 0	
Dislikes 0	
Response	
SDT had discussions on the length of time and believes 12 hours is an appropriate timeframe. The freeze protection measures must provide the level of protection that would allow operation for 12 continuous hours if the sun were to shine or the wind were to blow for that period.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree with the fine-toothed level of specificity that is proposed. A standard that is too specific only sets up entities for compliance failure and does not improve reliability. Creating overly-specific requirements and allowing exemptions creates loopholes in the solution, which ultimately sabotages reliability. Reclamation recommends the applicability be targeted to specific geographic region(s) or specific types of generating units that are the root causes of the cold weather problems FERC is attempting to solve. Mandatory compliance for these units should not be diminished in any way.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments received and will evaluate during Phase Two of the project.	
Mark Spencer - LS Power Development, LLC - 5	
Answer	No
Document Name	

Comment	
We note that the proposed standard requires performance at the ECWT, yet the question asks whether we support an open-ended requirement below the ECWT. We do not.	
Likes 1	Vistra Energy, 5, Roethemeyer Dan
Dislikes 0	
Response	
Thank you for your response. The SDT question should not have included the statement "or below" with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide "capability to operate…at the Extreme Cold Weather Temperature[.]"	
Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1	
Answer	No
Document Name	
Comment	
We do not have a concern where viable technical solutions exist but do have a concern where installing such measures would void manufacturer warranties and increase the risk of equipment failure. Additionally, renewable generation (Solar or Wind) is only capable of performing if the resource is available.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response. Please note the ability to take a declaration for technical exceptions as required.	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No

Document Name	
Comment	
Talen Energy Marketing supports Talen Generation's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to Talen Generation.	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
The equations in IEEE-515, IEEE Standard for the Testing, Design, Installation, and Maintenance of Electrical Resistance Trace Heating for Industrial Applications, have a steady-state basis. Granting an exception for inadequately protected equipment so long as it takes a long time to freeze would put the BES at risk and is not in accordance with industry practice. There is also no apparent basis for a figure of 12 hours as representing the maximum duration of a weather emergency. The historical worst-case winter storm in our area produced freeze protection-challenging cold weather (-15 F WCT or lower) for approx. 30 consecutive hours. Additionally, freeze protection margins cannot be reliably sliced so thin – there is great uncertainty in protecting a plant, due to frequent design and installation errors by heat tracing and insulation contractors. There is also no big-picture incentive to do so. The cost difference between a steady-state design and one with a survival limit of 12 hours is negligible in comparison to the cost to society of inadequate protection and the cost to GOs if finding that their forecasts are off and R6 retrofits are needed.	
Likes 0	
Dislikes 0	

Response	
SDT had discussions on the length of time and believes 12 hours is an appropriate timeframe. We recognize that heat tracing design specifications will generally require indefinite operation at the specified conditions.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	
Entergy agrees with the statement “at the Extreme Cold Weather Temperature” but does not agree with “or below”.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT question should not have included the statement “or below” with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide “capability to operate…at the Extreme Cold Weather Temperature[.]”	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
This is an arbitrary timeframe with an arbitrary assumption. I don't see a good technical basis established regarding this requirement.	
Likes 0	
Dislikes 0	
Response	

SDT has proposed the justification for the timeframes proposed and are captured in the Technical Rationale.	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the language proposed in Requirement R1, which if approved, would require new generation to have the capability to operate for a period of not less than 12 hours at the Extreme Cold Weather Temperature for the unit, but we do not agree that the unit needs to be capable of operating below the Extreme Cold Weather Temperature for 12 hours, as indicated in this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT question should not have included the statement “or below” with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide “capability to operate…at the Extreme Cold Weather Temperature[.]”	

Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Avista supports the language proposed in Requirement R1, which if approved, would require new generation to have the capability to operate for a period of not less than 12 hours at the Extreme Cold Weather Temperature for the unit, but we do not agree that the unit needs to be capable of operating below the Extreme Cold Weather Temperature for 12 hours, as indicated in this question. There should be an allowance for act of god situations which a plant can not reasonably account for.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT question should not have included the statement “or below” with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide “capability to operate…at the Extreme Cold Weather Temperature[.]”	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	
Comment	
Acciona Energy has no comments.	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Shannon Ferdinand - Decatur Energy Center LLC - 5	
Answer	Yes
Document Name	
Comment	
Capital Power supports the North American Generators Forum (NAGF) response to this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to NAGF.	
Imane Mrini - Austin Energy - 6	
Answer	Yes
Document Name	
Comment	
The last sentence of M1 is incomplete and therefore confusing. Is it supposed to be part of the sentence prior?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, the SDT has made a clarifying change.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	

Answer	Yes
Document Name	
Comment	
MidAmerican Energy supports the MRO NSRF comments for this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see MRO NSRF comment.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	

While the NAGF agrees with the proposal as being reasonable, there are still concerns related to this proposal. Those concerns include the expectation that this proposal will not protect against another event like Uri, and that the Extreme Cold Weather Temperature is not addressing wind and moisture. With this said, the proposal is considered by most to be clear and enforceable and provides clear guidance and expectations to design future generators to meet a design criterion.

The NAGF does have concern with the language around the exclusion for technical operational and commercial reasons. This language essentially makes this requirement optional to anyone that does not want to meet the design requirement. While we recognize the reasoning for the exemption language, we feel it makes the standard unenforceable by NERC.

Instead of creating the optional requirement, a more immediate impact would be seen by ensuring that Balancing Authorities and others are using information detailing generator capabilities when performing their planning processes to reduce the expectation of unplanned outages

due to the lack of appropriate planning. This would allow the appropriate entities, including regulatory officials, to identify where issues might arise and how to best address the issue rather than creating optional requirements.	
Likes 0	
Dislikes 0	
Response	
R1 requires that a 20 mph wind concurrent with the ECWT be considered for new units. As far as including/specifying a wind criterion for existing units, the SDT determined that it is difficult to apply a wind specification on already-constructed facilities, where most of the facility components have a fixed physical location and orientation, versus ability of taking wind into account for design and construction of new units. To address the cooling effects of wind on existing generating units, the SDT proposes utilization of actual experience at existing generating unit facilities (e.g., best locations for installing wind breaks that mitigated past freezing issues). The proposed R3 requires documenting freeze protection measures, which may include those measures used to reduce the cooling effects of wind necessary to protect against heat loss. The SDT appreciates the comments received and will evaluate during Phase Two of the project.	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
SIGE supports EEI's comment for Question 4 and agrees with the language of R1 for new generations units to implement freeze protection measures that provide capability to operate for a period of not less than twelve (12) continuous hours at the Extreme Cold Weather Temperature if the constraint exemption (bullet 2) remains in the requirement.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Daniel Gacek - Exelon - 1	

Answer	Yes
Document Name	
Comment	
Exelon concurs with EEI's comment to Question 4. Submitted on behalf of Exelon, Segments 1 & 3	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, 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	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #4.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	

Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
PNM supports EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Alison Mackellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	

Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	Yes
Document Name	
Comment	
LouisvilleG&E/KU support EEI's comments.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment, please see response to EEI.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
AEP supports the proposed 12-hour timeframe in the current draft, however we disagree with Q4's inference that the unit needs to be capable of performing *below* the Extreme Cold Weather Temperature for 12 hours. AEP interprets the text proposed in the final bullet of R1 as allowing a declaration to be used as an exception based on operational restrictions outside of the Generator Owner's control such as environmental permit limits for a new installation.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT question should not have included the statement "or below" with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide "capability to operate…at the Extreme Cold Weather Temperature[.]"	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E supports the requirement for a new generator to operate for a period not less than 12 hours as noted in the Requirement.	

PG&E also supports the comments supplied by EEI that is not a 12-hour timeframe as indicated in this question and the concerns indicated in the NAGF comments regarding the Standard being unenforceable by the ERO and NAGF's input on addressing the optional requirement language.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Please see Texas RE's answer to #5.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to question 5.	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3, Group Name OGE Energy	
Answer	Yes
Document Name	
Comment	

OG&E supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Joe Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports comments from EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with the EEI and the NAGF comments.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment, please see response to EEI and NAGF.	
Scott Kinney - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Avista supports the language proposed in Requirement R1, which if approved, would require new generation to have the capability to operate for a period of not less than 12 hours at the Extreme Cold Weather Temperature for the unit, but we do not agree that the unit needs to be capable of operating below the Extreme Cold Weather Temperature for 12 hours, as indicated in this question. There should be an allowance for act of god situations which a plant can not reasonably account for.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT question should not have included the statement “or below” with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide “capability to operate…at the Extreme Cold Weather Temperature[.]”	
Brooke Jockin - Portland General Electric Co. - 1, Group Name Portland General Electric Co.	
Answer	Yes
Document Name	
Comment	

Portland General Electric Company supports the survey response provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Avista supports the language proposed in Requirement R1, which if approved, would require new generation to have the capability to operate for a period of not less than 12 hours at the Extreme Cold Weather Temperature for the unit, but we do not agree that the unit needs to be capable of operating below the Extreme Cold Weather Temperature for 12 hours, as indicated in this question. There should be an allowance for act of god situations which a plant can not reasonably account for.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT question should not have included the statement “or below” with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide “capability to operate…at the Extreme Cold Weather Temperature[.]”	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	

Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees with the 12-hour continuous hours as proposed in R1.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	

DTE Electric supports NAGF comments provided for this project	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see response to NAGF.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	Yes
Document Name	
Comment	

It is our recommendation that wind should not be included in the design criteria for new Generation units unless added to Extreme Cold Weather Temperature definition. The rationale is due to the inconsistencies between R1 and R3. The language in R1 states that the GO shall include a concurrent 20 MPH wind speed in the design criteria for new generating units. Whereas the language in R3 states that the cold weather preparedness plan may include measures used to reduce the cooling effects of wind. Is the GO required to include wind in their calculations for all stations and all scenarios? If not, then what is the benefit for including this in the design criteria for new generating units?

Furthermore, the 20 MPH value seems to be somewhat arbitrary. Please provide additional clarification as to how this value was derived and the rationale behind this derivation.

Lastly, the standard drating team should consider how commercial constraints are referenced in R1. As written a declaration for a commercial constraint as defined by the Generator Owner could preclude the ability to implement appropriate freeze protection measures to provide capability of operating for twelve (12) hours at the documented Extreme Cold Weather Temperature. A commercial constraint could be defined by the Generator Owner to include the lack of budget allocated for winterization projects. This approach seems to not align with

the purpose of this standard, "To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its generating units."	
Likes 0	
Dislikes 0	
Response	
The Technical Rational has been modified to clarify why 20 MPH was selected for new units. As far as including/specifying a wind criterion for existing units, the SDT determined that it is difficult to apply a wind specification on already-constructed facilities, where most of the facility components have a fixed physical location and orientation, versus ability of taking wind into account for design and construction of new units. To address the cooling effects of wind on existing generating units, the SDT proposes utilization of actual experience at existing generating unit facilities (e.g., best locations for installing wind breaks that mitigated past freezing issues). The proposed R3 requires documenting freeze protection measures, which may include those measures used to reduce the cooling effects of wind necessary to protect against heat loss. The SDT appreciates the additional comments received and will evaluate during Phase Two of the project.	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
LaKenya VanNorman - LaKenya VanNorman On Behalf of: Aaron Casto, Florida Municipal Power Pool, 6; Carl Turner, Florida Municipal Power Agency, 5, 3, 4, 6; Chris Gowder, Florida Municipal Power Agency, 5, 3, 4, 6; Dan O'Hagan, Florida Municipal Power Agency, 5, 3, 4, 6; David Owens, Gainesville Regional Utilities, 1, 5, 3; Jade Bulitta, Florida Municipal Power Agency, 5, 3, 4, 6; Neville Bowen, Ocala Utility Services, 3; - LaKenya VanNorman, Group Name Florida Municipal Power Agency (FMPA)	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
John Liang - Snohomish County PUD No. 1 - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Michelle Amarantos - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Foung Mua, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Wei Shao, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; - Tim Kelley, Group Name SMUD / BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Gerry Adamski - Cogentrix Energy Power Management, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Adam Lee - MGE Energy - Madison Gas and Electric Co. - 4	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Young - Tenaska, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jamison Cawley - Nebraska Public Power District - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Eric Ruskamp - Lincoln Electric System - 6, Group Name LES	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Scott McGough - Georgia System Operations Corporation - 3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Johnson - Oglethorpe Power Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Meaghan Connell - Public Utility District No. 1 of Chelan County - 5, Group Name PUD No. 1 of Chelan County	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Lenise Kimes - City and County of San Francisco - 1,5 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Sean Steffensen - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Glenn Pressler - CPS Energy - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Devon Tremont - Taunton Municipal Lighting Plant - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michael Watt - Oklahoma Municipal Power Authority - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Brian Evans-Mongeon - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
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; John Nierenberg, 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, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	
Document Name	
Comment	

“Please see comments submitted by the Edison Electric Institute”	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	

5. Do you support the SDT proposed 1-hour timeframe to allow existing Generation units to demonstrate their performance at or below the Extreme Cold Weather Temperature? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
This continues to put an unnecessary burden on those generators that operate in freezing environments. This one hour timeline is arbitrary and doesn't seem to have any technical justification for the timeline.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. The SDT felt that finding historical operating data at both the ECWT and with a concurrent 20 MPH wind would create an inappropriately difficult condition that may not exist in historical records.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	
Entergy agrees with the statement “at the Extreme Cold Weather Temperature” but does not agree with “or below”.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. The SDT question should not have included the statement “or below” with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide “capability to operate…at the Extreme Cold Weather Temperature[.]”	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	
DTE Electric supports NAGF comments provided for this project	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to NAGF.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	
Tri-State feels that a 1-hour is too short of a time frame for reliability, instead we recommend the time frame of 4-hours.	
Likes 0	
Dislikes 0	

Response	
The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance.	
Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1	
Answer	No
Document Name	
Comment	
Need the ability to explain in a declaration, technical, commercial or operational constraints for existing units (as is proposed for new units under Requirement R1). We do not have a concern where viable technical solutions exist but do have a concern where installing such measures would void manufacturer warranties and increase the risk of equipment failure. Requiring a Corrective Action Plan (CAP) under Requirement R2 may not be feasible for certain generation, as the needed technological advancement may be delayed beyond the proposed implementation period or may never be achieved. Additionally, renewable generation (Solar or Wind) is only capable of performing if the resource is available.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please note that the Requirement R7 allows an existing generating unit to explain in a declaration the technical, commercial, or operational constraints for CAPS that are generated in R2 that would not allow them to complete the CAP.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	

How will it be proven that you've provided enough protection to sustain the minimum 1-hour capability during ECWT? It is still not clear why there is a different requirement for generating units existing prior to the effective date of the requirement. Shouldn't all generators have the same requirement of 12 hours while also allowing existing generatios to submit a corrective action plan?

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. GOs may also utilize design temperatures or current cold weather performance temperatures determined by an engineering analysis for initial demonstration of compliance on existing units.

Mark Spencer - LS Power Development, LLC - 5

Answer	No
Document Name	

Comment

We note that the proposed standard requires performance at the ECWT, yet the question asks whether we support an open-ended requirement below the ECWT. We do not. Additionally, we do not support disparate treatment of resource types that are otherwise similarly situated, and new versus existing creates disparate treatment. If the SDT selected 12 hours because they thought is was the duration necessary to enhance reliability, then it should apply to all generators. During the deliberation process, certain SDT team members were concerned a rigorous standard may cause "premature retirements." We understand that the sole reason that the existing generator standard differs from new is to mitigate the "premature retirements." Section 1341 of the Energy Policy Act of 2005, which was affirmed by the Commission in its Order 672, supports cost recovery for all costs prudently incurred to comply with the Reliability Standards, and it does not limit this consideration to specific types of units or circumstances, e.g., whether because of their "newness," or retirement considerations.

Additionally, the SDT assumes that good historical performance assures good future performance. A permissive prescriptive standard may not result in this outcome. We agree with the SDT that many generators have performed well in the past and may have operated at or below

their ECWT for extended durations. However, the proposed standard will only allow cost recovery for meeting the exact requirements of the standard and no more. If a generator owner elects to replace robust freeze protections that have demonstrated superlative performance with in-kind components at the end of their service life or after a major outage, the generator owner may not be able to recover the full cost of such replacement. In fact, ratemaking proceedings may expressly disallow costs incremental to meeting the one-hour standard. For these reasons, we do not support different standards between new and existing.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT question should not have included the statement "or below" with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide "capability to operate…at the Extreme Cold Weather Temperature[.]" R2 differs from R1 (existing vs. new) to allow existing units the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. Design temperatures or current cold weather performance temperatures determined by an engineering analysis may also be used for initial demonstration of compliance on existing units. This is intended to avoid unnecessary expenditures on existing plants that are already adequately freeze protected. Should these units experience a Generator Cold Weather Reliability Event, then R6 will require a CAP to remedy the situation.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
PG&E agrees with the input provided by the NAGF that the 1-hour timeframe will not make an improvement in performance during an extreme event and supports the NAGF recommendation on how to decide on the adequacy of the proposed timeframe.	
Likes 0	

Dislikes 0	
Response	
The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy strongly advocates for and supports appropriately addressing the reliability issues identified in the joint FERC/NERC report related to winter storm Uri in a non-arbitrary and cost-effective manner under the Federal Power Act. Accordingly, Dominion Energy recommends rather than a universal requirement to retrofit exiting generation to operate to an arbitrary temperature requirement that may be beyond its current design capabilities, a requirement to communicate the generating units' extreme cold weather operating capabilities to the RC and BA and a corresponding requirement to develop a corrective action plan to continue to operate to those capabilities if the unit fails to do so due to freezing. Dominion Energy is of the opinion that this modification will accomplish the reliability goal identified in the FERC/NERC report.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments received and will evaluate during Phase Two of the project.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	

Reclamation does not agree with the fine-toothed level of specificity that is proposed. The proposed calculations required to comply or determine whether compliance is required are unnecessary administrative and resource-intensive burdens that will not improve reliability and will detract from entities' ability to comply with the standard.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments received and will evaluate during Phase Two of the project.	
Claudine Bates - Black Hills Corporation - 6	
Answer	No
Document Name	
Comment	
BHC agrees with comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Josh Combs - Black Hills Corporation - 3	
Answer	No
Document Name	
Comment	

BHC agrees with comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Micah Runner - Black Hills Corporation - 1	
Answer	No
Document Name	
Comment	
BHC agrees with comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Sheila Suurmeier - Black Hills Corporation - 1,3,5,6	
Answer	No
Document Name	
Comment	
BHC agrees with comments submitted by EEI	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Tony Skourtas - Los Angeles Department of Water and Power - 3	
Answer	No
Document Name	
Comment	
The requirement should be for continuous operation. The capability of the unit operating for 1 hour under Extreme Cold Weather, does not mean the generating unit will be reliable in Extreme Cold Weather..	
Likes 0	
Dislikes 0	
Response	
The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. This is intended to avoid unnecessary expenditures on existing plants that are already adequately freeze protected. Should these units experience a Generator Cold Weather Reliability Event, then R6 will require a CAP to remedy the situation.	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
PNM has concern regarding how the acceptable evidence outline in M2 [Identification of generating units minimum temperature per Part 3.5.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, Facility cold	

weather preparedness plan, and CAP(s)] demonstrates the capability to operate a generating unit for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature.	
Likes 0	
Dislikes 0	
Response	
The SDT chose the methodology outlined in M2 to provide the compliance necessary to meet the standard without unnecessary retrofits and engineering analysis to be performed. The SDT will adjust M2 to provide better guidance and clarity on how compliance will be measured.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	No
Document Name	
Comment	
It is more appropriate to have a temperature profile for unit operation.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comment.	
Dan Roethemeyer - Vistra Energy - 5	
Answer	No
Document Name	
Comment	
The 1-hour timeframe, in itself, can be a reasonable standard. However, as discussed at length under Question 2, the term “Extreme Cold Weather Temperature” also must be defined in a similarly reasonable manner. As discussed under Question 2, Vistra proposes modifications	

to the definition of “Extreme Cold Weather Temperature” to make it more in line with the standards under consideration by the PUCT and to make it more economically feasible to meet.

In addition, Requirement R2 should expressly clarify that an existing resource will be deemed to have satisfied the requirements of R2 at its respective Extreme Cold Weather Temperature and that no new or modified freeze protection measures will be required if the Generator Owner: (i) has actual operating data demonstrating continuous operations for at least one hour at that plant’s Extreme Cold Weather Temperature (as cacluated under NERC’s Calculating Extreme Cold Weather Temperature guide), or (ii) in the absence of such data, can show that the plant is capable of sustained operations for one hour at that temperature based on design temperature or engineering analysis. Only if the plant cannot demonstrate (i) or (ii) above should the Generator Owner be required to implement a CAP to develop new or modified freeze protections to meet R2.

In addition, the language of R2 should make clear that the requirement is a weather preparedness standard, rather than a performance standard, and thus should avoid use of the word “ensure.”

The language of R2 could be modified as follows:

R2. For each generating unit(s) in commercial operation prior to [Effective Date of this requirement], the Generator Owner shall prepare its generating unit(s) by adding new or modifying existing freeze protection measures as needed to provide the capability to operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature. If a Generator Owner provides evidence that it has operated for at least one hour at or below its Extreme Cold Weather Temperature, or if the Generator Owner provides design specification information or other data (e.g., an engineering report) as detailed in M2 showing that it can operate for at least one hour at or below its Extreme Cold Weather Temperature, then the Generator Owner will be deemed to have met this Requirement R2, and need not implement new or additional freeze protection measures. Generating unit(s) that are not capable of operating for one (1) hour at its Extreme Cold Weather Temperature shall develop a Corrective Action Plan (CAP) for the identified issues, including identification of any needed modifications to the

cold weather preparedness plan required under Requirement R3. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning] M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its unit(s) in accordance with R2, or it has developed a CAP for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating units minimum temperature per Part 3.5.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, cold weather preparedness plan, engineering study, historical data demonstrating one hour of sustained operations by the unit(s) at the applicable Extreme Cold Weather Temperature, and CAP(s). Further, the SDT should consider adding a definition of "freeze protection measures" (applicable to all of EOP-012 and not just to R2) to clarify what those measures could entail and, importantly, to make clear that those measures do not have to include capital expenditures for redesign or retrofitting. For example, it should be clarified that "freeze protection measures" include temporary equipment like wind barriers. A new definition could be added as follows: Freeze protection measures include permanent or temporary equipment, procedures, or other measures reasonably targeted to contribute to sustained operation by an existing unit(s) for the timeframe in R1 or R2, as applicable, at the Extreme Cold Weather Temperature.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The team has reviewed your comment suggesting a revision to R2 and believes it is unnecessary. The suggested revisions to M2 present clarifications that support the intent of the SDT and those changes will be considered. Temporary equipment, measures, and actions intended to ensure operation during cold conditions constitute part of what is intended by "freeze protection measures".
Teresa Krabe - Lower Colorado River Authority - 5

Answer	No
Document Name	
Comment	
It is more appropriate to have a temperature profile for unit operation.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your comment.	
LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 6	
Answer	No
Document Name	
Comment	
How does an existing unit "ensure" operation for one hour at a temperature that only occurs during an extreme cold weather event? This creates a liability for post event non-performance while doing little to maximize the possibility the unit will perform during such events. In addition, this imposes additional documentation and expense on entities with units that have demonstrated performance during actual events. Finally, there is no value "ensuring" capability to operate for 1 hour during an extreme event since performance needs to be maintained for the duration of the event, not just one hour.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES Clean Energy supports comments submitted by NAGF. AES Clean Energy agrees with NAGF that the 1-hour timeframe will not make a significant difference in performance improvement during an extreme cold weather event and that a better approach that relies on data should be employed in setting the time requirement.	
Likes 0	
Dislikes 0	
Response	
The team has reviewed your comment and believes that making the suggested modification will substantially change the Standard that was approved by the industry.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
While providing a clear expectation for Generator Owners to meet a performance level, the 1-hour timeframe to meet the Extreme Cold Weather Temperature has not been shown to make any level of improvement of performance during an extreme event such as Uri. The NAGF notes that the weather in Dallas was at or below the ECWT for over 50 hours straight and the Houston area met or exceeded the ECWT for 30 hours or more. The SDT has also not shown that the ECWT would address the issue the Joint Report mentioned multiple times related to	

generators failing prior to reaching their minimum design temperature. The NAGF recommends that a comparison of these units' failure point and the ECWT be provided to industry before a determination is made as to the adequacy of the proposal.	
Likes 0	
Dislikes 0	
Response	
The team has reviewed your comment and believes that making the suggested modification will substantially change the Standard that was approved by the industry.	
Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen	
Answer	No
Document Name	
Comment	
ISO-NE believes that Generators will have difficulty creating the needed conditions to "demonstrate" performance for 1-hour at or below the ECWT absent historical data. How is this enforceable if a Unit can not demonstrate the performance. ISO-NE recommends that existing units be required to demonstrate through historical information or through design specifications (equipment ratings, etc.) the capability to operate continuously at the Extreme Cold Weather Temperature for the unit(s), assuming a concurrent twenty (20) mph wind speed on any exposed Generator Cold Weather Critical Components;	
Likes 0	
Dislikes 0	
Response	
The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. GOs may also utilize design temperatures or current cold weather performance temperatures determined by an engineering analysis for initial demonstration of compliance on existing units. As far as including/specifying a wind criterion for existing units, the SDT determined that it is difficult to apply a wind specification on already-constructed facilities, where most of the facility components have a	

fixed physical location and orientation, versus ability of taking wind into account for design and construction of new units. To address the cooling effects of wind on existing generating units, the SDT proposes utilization of actual experience at existing generating unit facilities (e.g., best locations for installing wind breaks that mitigated past freezing issues). The proposed R3 requires documenting freeze protection measures, which may include those measures used to reduce the cooling effects of wind necessary to protect against heat loss.	
Carl Pineault - Hydro-Qu?bec Production - 1,5	
Answer	No
Document Name	
Comment	
Requirement R4 appears to already fullfill the requirement of R2. The 2 requirements should be merged into one.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The R4 requirement is intended to drive a periodic review every five years to ensure continued compliance.	
Steven Sconce - EDF Renewable Energy - 5	
Answer	No
Document Name	
Comment	
Please refer to our comments in Question #3. In addition, the delta between R1 requesting 12 hours and R2 requesting 1 hour does not make sense short term / long term. Is it the intent of the SDT to converge to the same amount of time on the long term?	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. GOs may also utilize design temperatures or current cold weather performance temperatures determined by an engineering analysis for initial demonstration of compliance on existing units. This is intended to avoid unnecessary expenditures on existing plants that are already adequately freeze protected. Should these units experience a Generator Cold Weather Reliability Event, then R6 will require a CAP to remedy the situation.	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	No
Document Name	
Comment	
MISO supports the comments submitted by the ISO/RTO Council Standards Review Committee (IRC SRC).	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to IRC SRC.	
Shannon Ferdinand - Decatur Energy Center LLC - 5	
Answer	No
Document Name	
Comment	
Capital Power supports the North American Generators Forum (NAGF) response to this question.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment, please see response to NAGF.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
Invenergy believes the performance expectations of all generators should be the same, and the separate performance criteria proposed for new and existing generating units in R1 and R2 respectively set precedents for the unequitable treatment of Generator Owners based on a fluid effective date of the Requirement. If the SDT decides to regulate new and existing generators differently, then the SDT should establish a definition for new and existing units not based on the effective date of the Requirement(s), but rather the age of the generating unit.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The team has reviewed your comment and believes that making the suggested modification will substantially change the Standard that was approved by the industry. The SDT believes that to set a point in time for the industry to use to differentiate between existing and new units is appropriate and the team has chosen the effective date of the standard as that differentiating date.	
Gerry Adamski - Cogentrix Energy Power Management, LLC - 5	
Answer	No
Document Name	
Comment	
There should be more clarity for existing generation units to meet compliance for the 1 hr capability either in the requirement, Measure, or technical rational for the standard	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has made clarifying adjustments to the Requirement, Measure, and Technical Rationale to assist in understanding.	
Whitney Wallace - Calpine Corporation - 5 - WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
R2 requires the GO to operate for no less than 1 continuous hour at the ECW Temperature. First, wind speed should be specified here as in R1; the wind speed should be classified as "sustained wind speed," and the "sustained wind speed" should be designated as 20 mph (greater sustained wind speeds exceed the ECW). Second, ***this question infers GOs will be required to operate reliably below the ECW Temperature***. That is not the R1 requirement or the R2 requirement.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The team has reviewed your comment and believes that making the suggested modification is unnecessary as "sustained" is implicit in the 20 mph requirement. The SDT question should not have included the statement "below" in the question and the intent of the Standard is as written.	
Russell Noble - Cowlitz County PUD - 3	
Answer	No
Document Name	
Comment	

While in agreement there should be an allowance for existing generation to demonstrate performance, 1-hour may be too lenient to cover the reliability gap.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	No
Document Name	
Comment	
Agree with comments provided by Russell Noble.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to Russell Noble.	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	

While the SRC generally supports the idea of making existing generators demonstrate they can operate at the ECWT (with the proposed revision in Question 2) for at least one hour, that language does not require adding a 20 mph wind, which differs from the requirement for new generation. The SRC believes the BES will be more resilient if *all* generators must demonstrate the ability to operate at the ECWT *plus* a 20 mph wind.

The SRC believes Generators will have difficulty creating the needed conditions to demonstrate performance for one hour at or below the ECWT absent historical data. Thus, the SRC recommends the Standard require existing units to demonstrate - through historical information or design specifications (equipment ratings, *etc*.) - the capability to operate continuously at the ECWT for the unit(s), assuming a concurrent twenty (20) mph wind speed on any exposed Generator Cold Weather Critical Components.

Likes 0	
Dislikes 0	

Response

The team has reviewed your comment and believes that making the suggested modification will substantially change the Standard that was approved by the industry. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. The SDT felt that finding historical operating data at both the ECWT and with a concurrent 20 MPH wind would create an inappropriately difficult condition that may not exist in historical records. As far as including/specifying a wind criterion for existing units, the SDT determined that it is difficult to apply a wind specification on already-constructed facilities, where most of the facility components have a fixed physical location and orientation, versus ability of taking wind into account for design and construction of new units. To address the cooling effects of wind on existing generating units, the SDT proposes utilization of actual experience at existing generating unit facilities (e.g., best locations for installing wind breaks that mitigated past freezing issues). The proposed R3 requires documenting freeze protection measures, which may include those measures used to reduce the cooling effects of wind necessary to protect against heat loss.

Rhonda Jones - Invenergy LLC - 5

Answer	No
Document Name	

Comment

Invenergy believes the performance expectations of all generators should be the same, and the separate performance criteria proposed for new and existing generating units in R1 and R2 respectively set precedents for the unequitable treatment of Generator Owners based on a fluid effective date of the Standard. If the SDT decides to regulate new and existing generators differently, then the SDT should establish a definition for new and existing units not based on the effective date of the Requirement, but rather the age of the generating unit.	
Likes 0	
Dislikes 0	
Response	
The team has reviewed your comment and believes that making the suggested modification will substantially change the Standard that was approved by the industry.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Agree, but this could become problematic because there is no time period mentioned. How long is a historical run able to be used as meeting the requirement?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance.	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	

Talen Energy supports the comments of the NAGF on this topac, and adds that a one-hour period is appropriate since the variability of weather conditions often makes a longer demonstration impossible. This is not the end of the matter, however; this achievement should be based for conventional plants on WCT (or DBT-plus-20 mph), not DBT alone.

The lack of credibility of DBT-based achievements can be seen in reviewing the events of January 2014 for our area. No problems were encountered on 1/4/2014 at -4 F DBT and a 4.6 mph wind (-14.6 F WCT). EOP-012-1 in its present form says that all plants online at that time had a proven DBT capability of at least -4 F. Many of these facilities were knocked offline three days later, however, when the Polar Vortex of 2014 bottomed-out at 0 F with a 21.9 mph wind (-22.8 WCT).

More importantly, R2 should allow declaring R3.5.2 WCT capability values as an alternative to retrofits, and EOP-012-1 should also permit R6 CAPS that consist of revising these inputs instead of modifying equipment. Existing facilities were built in accordance with all regulatory and market rules in place at the time, and it would be wrong to order them in ex post facto fashion to become something significantly different. The lack of winterization rules to-date is not a failing of GO/GOPs, so they should not be subjected to punitive measures.

RC/BA/TOP planning based on GO/GOP temperature capability inputs hasn't worked in the past, but only due to these entities insisting on an incorrect basis (DBT only) plus failing to differentiate between temperature-caused and precipitation-caused outages. Planning Assessments and real-time reserve margin forecasts should be highly accurate once EOP-012-1 puts an end to this confusion.

Likes 0	
Dislikes 0	

Response

The SDT appreciates your comments. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. GOs may also utilize design temperatures or current cold weather performance temperatures determined by an engineering analysis for initial demonstration of compliance on existing units. The SDT felt that finding historical operating data at both the ECWT and with a concurrent 20 MPH wind would create an inappropriately difficult condition that may not exist in historical records. Most existing facilities already utilize appropriate levels of wind breaks (permanent or temporary) based upon their site specific experience. Should these units experience a Generator Cold Weather Reliability Event, then R6 will require a CAP to remedy the situation. As far as including/specifying a wind criterion for existing units, the SDT determined that it is difficult to apply a wind specification on already-constructed facilities, where most of the facility components have a fixed physical location and orientation, versus

ability of taking wind into account for design and construction of new units. To address the cooling effects of wind on existing generating units, the SDT proposes utilization of actual experience at existing generating unit facilities (e.g., best locations for installing wind breaks that mitigated past freezing issues). The proposed R3 requires documenting freeze protection measures, which may include those measures used to reduce the cooling effects of wind necessary to protect against heat loss.	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	Yes
Document Name	
Comment	
Talen Energy Marketing LLC supports Talen Generation's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to Talen Generation.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees with the 1-hour timeframe to allow existing Generation units to demonstrate their performance as proposed in R2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	

Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Avista supports the proposed R2 language that requires GOs of existing Generating units ensure new or modify existing freeze protection measures provide the capability to operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Scott Kinney - Avista - Avista Corporation - 3	
Answer	Yes

Document Name	
Comment	
Avista supports the proposed R2 language that requires GOs of existing Generating units ensure new or modify existing freeze protection measures provide the capability to operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Joe Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Xcel Energy can support the 1-hour time frame for existing units, predicated on the ability that R2 is tied to R6 and, subsequently, R7. The ability to declare qualifying units as unable to implement corrective actions is a required element for Xcel Energy to support R2 of the Standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	

Comment	
AEP supports the proposed 1-hour timeframe in the current draft, however we disagree with Q5's inference that the unit needs to be capable of operating *below* the Extreme Cold Weather Temperature for 1 hour.	
Likes 0	
Dislikes 0	
Response	
The SDT question should not have included the statement "or below" with reference to the Extreme Cold Weather Temperature criteria. The intent of the standard is as written: new units should have freeze protection measures implemented to provide "capability to operate…at the Extreme Cold Weather Temperature[.]"	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	Yes
Document Name	
Comment	
LG&E/KU supports the SDT proposed 1-hour timeframe.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	

Comment	
Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Alison Mackellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	

Answer	Yes
Document Name	
Comment	
Currently this draft requires Generator Owners to retrofit their units to meet the newly defined Extreme Weather temperature levels. NRG understands that to invoke any technical, operational, or commercial exclusions clauses (such as units designed above 32 F) that each facility would require development of a CAP which may not be able to be executed under R7. It would be more prudent to include a provision in R2 to allow generators to provide these exclusions and associated justifications upfront. *NRG believes that R2 should not require existing Generators to retrofit but rather report their extreme cold weather operating parameters to the appropriate parties and only require a CAP if they fail to meet their operating parameters as communicated to the appropriate entities. This will allow the appropriate entities to identify where issues might arise and how to best address the issue rather than placing an unreasonable reliability requirement on all Generator Owners. The weatherization requirements, as currently drafted without cost recovery mechanisms in place, may exacerbate current difficulties for independent generators to cover costs and earn a return overall. The potential cost implications may result in generators either retiring or opting out of the winter season through seasonal mothballing.*	
Likes 0	
Dislikes 0	
Response	
The SDT believes that the vast majority of existing facilities with freeze protection measures will meet the R2 standard without requiring substantial retrofits. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. GOs may also utilize design temperatures or current cold weather performance temperatures determined by an engineering analysis for initial demonstration of compliance on existing units. This is intended to avoid unnecessary expenditures on existing plants that are already adequately freeze protected. Should these units experience a Generator Cold Weather Reliability Event, then R6 will require a CAP to remedy the situation.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	

Comment
Currently this draft requires Generator Owners to retrofit their units to meet the newly defined Extreme Weather temperature levels. NRG understands that to invoke any technical, operational, or commercial exclusions clauses (such as units designed above 32 F) that each facility would require development of a CAP which may not be able to be executed under R7. It would be more prudent to include a provision in R2 to allow generators to provide these exclusions and associated justifications upfront. *NRG believes that R2 should not require existing Generators to retrofit but rather report their extreme cold weather operating parameters to the appropriate parties and only require a CAP if they fail to meet their operating parameters as communicated to the appropriate entities. This will allow the appropriate entities to identify where issues might arise and how to best address the issue rather than placing an unreasonable reliability requirement on all Generator Owners. The weatherization requirements, as currently drafted without cost recovery mechanisms in place, may exacerbate current difficulties for independent generators to cover costs and earn a return overall. The potential cost implications may result in generators either retiring or opting out of the winter season through seasonal mothballing.*

Likes 0	
Dislikes 0	

Response
The SDT believes that the vast majority of existing facilities with freeze protection measures will meet the R2 standard without requiring substantial retrofits. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. GOs may also utilize design temperatures or current cold weather performance temperatures determined by an engineering analysis for initial demonstration of compliance on existing units. This is intended to avoid unnecessary expenditures on existing plants that are already adequately freeze protected. Should these units experience a Generator Cold Weather Reliability Event, then R6 will require a CAP to remedy the situation.

Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, 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
While Evergy supports EEI's comments in our responses, in an effort to answer the specific question from the SDT, Evergy holds no concerns with the 1-hour timeframe. Evergy agrees with the concerns about retrofits to existing resources with future transition plans but maintains that the SDT does not hold the authority to address the retrofit concern.

Likes 0	
Dislikes 0	

Response
Thank you for your comment.

Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	

Comment
SIGE supports the proposed 1-hour timeframe in R2; however, for clarity and consistency, SIGE recommends modifying R2 to mirror R1: *For each generating unit(s) in commercial operation prior to [Effective Date of this requirement], the Generator Owner shall:* • *Ensure its generating unit(s) add new or modify existing freeze protection measures as needed to provide the capability to operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature. Generator Owner shall develop a Corrective Action Plan (CAP) for the identified issues, including identification of any needed modifications to the cold weather preparedness plan required under Requirement R3; or* • ***Explain in a declaration, any technical, commercial, or operational constraints as defined by the Generator Owner that preclude the ability to implement appropriate freeze protection measures to provide capability of operating for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature.***

Likes 0	
Dislikes 0	

Response	
Thank you for your comment. Should a CAP be required pursuant to R2, R4, or R6, R7 will allow a similar declaration to be made due to technical, commercial, or operational constraints.	
Stewart Rake - Luminant Mining Company LLC - 7	
Answer	Yes
Document Name	
Comment	

The 1-hour timeframe, in itself, can be a reasonable standard. However, as discussed at length under Question 2, the term "Extreme Cold Weather Temperature" also must be defined in a similarly reasonable manner. As discussed under Question 2, Vistra proposes modifications to the definition of "Extreme Cold Weather Temperature" to make it more in line with the standards under consideration by the PUCT and to make it more economically feasible to meet.

In addition, Requirement R2 should expressly clarify that an existing resource will be deemed to have satisfied the requirements of R2 at its respective Extreme Cold Weather Temperature and that no new or modified freeze protection measures will be required if the Generator Owner: (i) has actual operating data demonstrating continuous operations for at least one hour at that plant's Extreme Cold Weather Temperature (as cacluated under NERC's Calculating Extreme Cold Weather Temperature guide), or (ii) in the absence of such data, can show that the plant is capable of sustained operations for one hour at that temperature based on design temperature or engineering analysis. Only if the plant cannot demonstrate (i) or (ii) above should the Generator Owner be required to implement a CAP to develop new or modified freeze protections to meet R2.

In addition, the language of R2 should make clear that the requirement is a weather preparedness standard, rather than a performance standard, and thus should avoid use of the word "ensure."

The language of R2 could be modified as follows:

R2. For each generating unit(s) in commercial operation prior to [Effective Date of this requirement], the Generator Owner shall prepare its generating unit(s) by adding new or modifying existing freeze protection measures as needed to provide the capability to operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature. If a Generator Owner provides evidence that it has operated for at least one hour at or below its Extreme Cold Weather Temperature, or if the Generator Owner provides design specification information

or other data (e.g., an engineering report) as detailed in M2 showing that it can operate for at least one hour at or below its Extreme Cold Weather Temperature, then the Generator Owner will be deemed to have met this Requirement R2, and need not implement new or additional freeze protection measures. Generating unit(s) that are not capable of operating for one (1) hour at its Extreme Cold Weather Temperature shall develop a Corrective Action Plan (CAP) for the identified issues, including identification of any needed modifications to the cold weather preparedness plan required under Requirement R3. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning] M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its unit(s) in accordance with R2, or it has developed a CAP for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating units minimum temperature per Part 3.5.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, cold weather preparedness plan, engineering study, historical data demonstrating one hour of sustained operations by the unit(s) at the applicable Extreme Cold Weather Temperature, and CAP(s). Further, the SDT should consider adding a definition of "freeze protection measures" (applicable to all of EOP-012 and not just to R2) to clarify what those measures could entail and, importantly, to make clear that those measures do not have to include capital expenditures for redesign or retrofitting. For example, it should be clarified that "freeze protection measures" include temporary equipment like wind barriers. A new definition could be added as follows: Freeze protection measures include permanent or temporary equipment, procedures, or other measures reasonably targeted to contribute to sustained operation by an existing unit(s) for the timeframe in R1 or R2, as applicable, at the Extreme Cold Weather Temperature.

Likes 0	
Dislikes 0	

Response
The team has reviewed your comment suggesting a revision to R2 and believes it is unnecessary. The suggested revisions to M2 present clarifications that support the intent of the SDT and those changes will be considered. Temporary equipment, measures and actions intended to ensure operation during cold conditions constitute part of what is intended by "freeze protection measures".

George Brown - Acciona Energy North America - 5	
Answer	Yes

Document Name	
Comment	
Acciona Energy has no comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Avista supports the proposed R2 language that requires GOs of existing Generating units ensure new or modify existing freeze protection measures provide the capability to operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
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; John Nierenberg, 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, Group Name Tacoma Power	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Brian Evans-Mongeon - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michael Watt - Oklahoma Municipal Power Authority - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Brooke Jockin - Portland General Electric Co. - 1, Group Name Portland General Electric Co.	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Devon Tremont - Taunton Municipal Lighting Plant - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Glenn Pressler - CPS Energy - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Sean Steffensen - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Meaghan Connell - Public Utility District No. 1 of Chelan County - 5, Group Name PUD No. 1 of Chelan County	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Johnson - Oglethorpe Power Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Scott McGough - Georgia System Operations Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Eric Ruskamp - Lincoln Electric System - 6, Group Name LES	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jamison Cawley - Nebraska Public Power District - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Young - Tenaska, Inc. - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Imane Mrini - Austin Energy - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Adam Lee - MGE Energy - Madison Gas and Electric Co. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Foung Mua, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Wei Shao, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; - Tim Kelley, Group Name SMUD / BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michelle Amarantos - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
John Liang - Snohomish County PUD No. 1 - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
LaKenya VanNorman - LaKenya VanNorman On Behalf of: Aaron Casto, Florida Municipal Power Pool, 6; Carl Turner, Florida Municipal Power Agency, 5, 3, 4, 6; Chris Gowder, Florida Municipal Power Agency, 5, 3, 4, 6; Dan O'Hagan, Florida Municipal Power Agency, 5, 3, 4, 6; David Owens, Gainesville Regional Utilities, 1, 5, 3; Jade Bulitta, Florida Municipal Power Agency, 5, 3, 4, 6; Neville Bowen, Ocala Utility Services, 3; - LaKenya VanNorman, Group Name Florida Municipal Power Agency (FMPA)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3, Group Name OGE Energy	
Answer	
Document Name	
Comment	
OG&E supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see response to EEI.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE does not agree the proposed 1-hour timeframe in Requirement R2 is sufficient to allow existing Generation units to demonstrate their performance at or below the Extreme Cold Weather Temperature. Historical events in 2011, 2014, 2018, and 2021, have instances in which it has taken at least 6-12 hours for freezing issues to appear, depending on the unit status. During the South Central United States cold weather BES event in January 2018, for example, cold weather was sustained for two days. Between January 15 and January 17, 2018, generation resources experienced various outages, derates, or failures to start. Similarly, for over two days in February 2021, ERCOT	

averaged 34,000 MW of generation outages. The SDT should consider a longer duration to demonstrate performance at or below the Extreme Cold Weather Temperature based on historic events.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT chose the one-hour standard to provide existing generators the opportunity to use historic operating data for initial demonstration of compliance. For any facility that experience a Generator Cold Weather Reliability Event, they will have to develop a CAP per R6.	
Lenise Kimes - City and County of San Francisco - 1,5 - WECC	
Answer	
Document Name	
Comment	
Difficult to answer yes or no... the 1-hour timeframe for demonstrating (which we interpret to mean testing) a Generation unit's performance sounds reasonable, however, if operating at or below the Extreme Cold Weather Temperature, you would not be in a testing state, you would be in an *actual* Extreme Cold Weather Temperature state.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please note that Generating units can use actual unit performance data at temperatures below their ECWT to document their ability to operate at these temperatures. There is no expectation that they will need to perform a dedicated test to prove this ability to operate.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	

Document Name	
Comment	
“Please see comments submitted by the Edison Electric Institute”	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	

6. Do you support the addition of a 20 megawatt minimum (corresponding to the definition of a BES impacting generating unit) for requiring CAPS for derates? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Please refer to comments in question 2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	
Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
Invenergy supports the addition of a megawatt minimum for requiring CAPs for derates. However, Invenergy believes the minimum could be better aligned with NERC's BES criteria by establishing a minimum of 20 MVA for individual generating units identified under Inclusion I2 of the BES definition, or a minimum of 75 MVA for generating units identified under Inclusion I4 of the BES definition.	

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.

Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)

Answer	No
Document Name	

Comment

The SRC supports the addition of a 20 MW minimum to align with the BES definition of a generating unit. That said, we do not support the corresponding limitations on Corrective Action Plans (CAPs) in the Generator Cold Weather Reliability Event (GCWRE) definition. As written, when taking the proposed GCWRE definition in conjunction with Requirement 6, a GO must develop a CAP if a unit experiences, "a forced derate of *more than 10% of the total capacity* of the unit, ***and*** *exceeding 20 MWs*, for longer than four hours in duration…." The SRC believes this language could be interpreted to exclude all units rated at 200 MWs or less. Specifically, for 10% of unit capacity to exceed 20 MWs, the unit must have nameplate capacity of at least 201 MWs (*i.e.,* 10% of 201 MWs = 20.1 MWs).

The SRC cannot support such a broad carve out of applicability. The SRC recommends the SDT revise the GCWRE definition to make clear a *plant* or *facility* consisting of individual units less than 200 MW must aggregate the derate to apply to the entire plant/facility to reach the 10% and 20 MW threshold; *i.e.*, the GO of a plant consisting of five 190 MW units (950 MW) each experiencing a 10% derate (19 MWs) would aggregate the unit derates to determine whether the 20 MW threshold is met (19 MWs times 5 units = 95 MWs; because 95 MWs > 20 MWs, the Standard would apply).

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.

Whitney Wallace - Calpine Corporation - 5 - WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The definition should be clarified. Is it 10% of the unit or 10% of the power block? In addition, as written, it is interpreted that it is only reportable if the impact is 10% of the unit capacity and exceeds 20 MW. The definition is not written as “or” as implied in the question. Further, there is no tie for the derate to be the result of a GCWRE. For example, a failed thermocouple on a duct burner runner in a heat recovery steam generator will require a CAP under this proposed language. However, thermocouples are consumable components that are replaced routinely due to the cyclic nature of duct burner operation in combined cycle power plants. Besides clarifying the definition of GCWRE to pertain only to GCWCC, NERC should consider implementing tiered limits (e.g., 50 MW for 500 MW or more, 25 MW for less than 500 MW, etc.). This type of tiering system would alleviate potentially excessive administrative burdens on plant staff associated with CAPs. For smaller units (less than 20 MWs), a CAP should not be required.	
Likes 0	
Dislikes 0	

Response
Thank you for your comments. The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project. It is noted that a Generator Cold Weather Reliability Event by definition has freezing as the apparent cause.

George Brown - Acciona Energy North America - 5

Answer	No
Document Name	
Comment	
Acciona Energy supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to MRO NSRF.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
Invenergy supports the addition of a megawatt minimum for requiring CAPs for derates. However, Invenergy believes the minimum could be better aligned with NERC's BES criteria by establishing a minimum of 20 MVA for individual generating units identified under Inclusion I2 of the BES definition, or a minimum of 75 MVA for generating units identified under Inclusion I4 of the BES definition.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	
Adam Lee - MGE Energy - Madison Gas and Electric Co. - 4	

Answer	No
Document Name	
Comment	
Madison Gas and Electric supports the comments of the MRO NSRF	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3	
Answer	No
Document Name	
Comment	
Madison Gas and Electric supports the comments from the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	No
Document Name	
Comment	

MISO supports the comments submitted by the ISO/RTO Council Standards Review Committee (IRC SRC).	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to IRC SRC.	
Steven Sconce - EDF Renewable Energy - 5	
Answer	No
Document Name	
Comment	
The 20MW value is reasonable; however, for solar and wind generation, the term generating unit needs further definition for aggregate production (total-plant) vs. individual generator/inverter-based resource. EDF supports the comments submitted by Talen Generation.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	No
Document Name	
Comment	

MidAmerican Energy supports the MRO NSRF response to this question, referring to the answer to question 2 regarding the Generator Cold Weather Reliability Event definition.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	No
Document Name	
Comment	
Please refer to comments provided by the MRO NSRF for the Generator Cold Weather Reliability Event definition, in question 2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	No
Document Name	
Comment	
Alliant Energy supports the comments submitted by the MRO NSRF.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen	
Answer	No
Document Name	
Comment	
ISO-NE believes the term Generating unit is vague and is open to interpretation. Does this mean each generating unit or is it an entire facility. Depending on the interpretation of unit by a GO, they could declare each unit separate in the large plant with many separate units which could preclude them from the applicability section of this standard as well as exempt form the CAP requirements outlined in Requirement 6.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team appreciates your comment and refers to the definition of generating unit in the applicability section of the standard.	
LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 6	
Answer	No
Document Name	
Comment	

This language exempts distributed generation, which is trending upward and is becoming a larger percentage of total generation, and creates a "perverse incentive" to implement multiple small units to avoid requirements. This subverts the purpose of mitigating reliability impacts during extreme cold weather.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree with the fine-toothed level of specificity that is proposed. Too much effort is required to be spent determining whether or not the requirements apply or if they can be avoided. Reclamation recommends the standard be written in a plain and straightforward set of requirements. Please refer to the proposal submitted in Reclamation's comments to Draft 1 Question 4.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team appreciates your comment and believes this recommendation would be considered a substantive change to the proposed language. As such, no changes will be made to this effect for the final ballot.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	No

Document Name	
Comment	
All generation, regardless of size, needs to be reliable for the range of conditions the industry agrees to.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team appreciates your comment and believes this recommendation would be considered a substantive change to the proposed language. As such, no changes will be made to this effect for the final ballot.	
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; John Nierenberg, 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, Group Name Tacoma Power	
Answer	No
Document Name	
Comment	
In the definition of Generator Cold Weather Reliability Event, Tacoma Power recommends changing “total capacity of the unit” to “facility rating of the unit.” Tacoma Power is concerned with the regulatory burden of trying to document the total capacity of a unit that is seasonally dependent/variable. By changing to “facility rating”, this would ensure a fixed and predictable number that constitutes the 10% value.	
Likes 1	LS Power Development, LLC, 5, Spencer Mark
Dislikes 0	
Response	
The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	

Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No
Document Name	
Comment	
Talen Energy Marketing supports Talen Generation's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to Talen Generation.	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
The value of 20 MW is suitable, but it needs to be applied for EOP-012-1 in plant-total fashion, not per generation unit as in the presently proposed definition of a Generator Cold Weather Reliability Event. A criterion of 20 MW per wind turbine would be meaningless.	
Likes 1	LS Power Development, LLC, 5, Spencer Mark
Dislikes 0	
Response	
The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	

Answer	No
Document Name	
Comment	
We see no technical justification for the 20 MW threashold. How will this apply to Hydro resouces that are run-of-the-river where their capacity may diminish, but due to water flow (low fuel), they would never be able to generate to thier capacity?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Generator Cold Weather Reliability Event is defined in the standard as certain events which are due to freezing of equipment within the Generator Owner's control. As such, low water level events would not apply.	
Carl Pineault - Hydro-Qu?bec Production - 1,5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your review	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	No
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your review	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the addition of a 20 megawatt minimum, as proposed in the definition for a “Generator Gold Weather Event”, however, Question 6 and language contained in the Technical Rationale (see page 8, Requirement R6), raises an important question about the intended alignment of the minimum value (as described in the definition of Generator Cold Weather Reliability Event) with the BES definition. If this threshold is intended to align with the BES definition, then the threshold should be adjusted to consider the differences between conventional and distributed/IBR resources. While the 20 MW value aligns with the BES definition for the minimum individual conventional generating resources, (see Inclusion I2); the threshold for Inverter Based Resources (i.e., dispersed power producing resources/Inclusion I4) is measure by the aggregated capacity of a plant resulting in a minimum value of 75 MW. For this reason, EEI asks for additional clarification whether the minimum threshold value is to be aligned with the BES definition, or not.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	

Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Avista supports the addition of a 20 megawatt minimum with the proposed Generator Cold Weather Reliability Event and its impact on GO responsibilities as it relates to CAPS within Requirement R6.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	Yes
Document Name	
Comment	
Deanna Carlson, Cowlitz PUD, 5, 9/1/22	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Michelle Amarantos - APS - Arizona Public Service Co. - 5	
Answer	Yes

Document Name	
Comment	
APS supports the addition of a 20 megawatt minimum as proposed in the definition of a “Generator Cold Weather Reliability Event.” Additionally, APS echoes EEI’s comments questioning the intended alignment of the minimum value described in the “Generator Cold Weather Reliability Event” definition with the BES definition. If the threshold is intended to align with the BES definition, then it should be adjusted to consider the differences between conventional and inverter-based resources. While the 20 MW value aligns with the BES definition for the minimum individual conventional generating resources, (see Inclusion I2); the threshold for Inverter Based Resources (i.e., dispersed power producing resources/Inclusion I4) is measure by the aggregated capacity of a plant resulting in a minimum value of 75 MW.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	
Shannon Ferdinand - Decatur Energy Center LLC - 5	
Answer	Yes
Document Name	
Comment	
Capital Power supports the North American Generators Forum (NAGF) response to this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to NAGF.	

Mark Young - Tenaska, Inc. - 5	
Answer	Yes
Document Name	
Comment	
As long as the 10% is an additional criteria, e.g. 10% AND 20 MW. We do not support just a 20 MW derate alone.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT agrees that both of these criteria must be met to trigger a Generator Cold Weather Event.	
Jamison Cawley - Nebraska Public Power District - 1	
Answer	Yes
Document Name	
Comment	
Yes, the addition of a 20 megawatt minimum component to the 10% minimum adequately addresses the reliability need while uniformly applying the derate threshold to generating units regardless of total capacity or fuel source.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Stewart Rake - Luminant Mining Company LLC - 7	
Answer	Yes

Document Name	
Comment	
Vistra has no comments on this proposed change.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
SIGE does not oppose the 20 megawatts minimum; however, SIGE does have recommendations for how it is currently addressed in the Generator Cold Weather Reliability Event definition. See SIGE's response to Question 2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please refer to the responses to Question 2 that address changes made to the structure of the definition of a Generator Cold Weather Reliability Event.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	

Comment	
Exelon concurs with EEI's comment to Question 6. Submitted on behalf of Exelon, Segments 1 & 3	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Dan Roethemeyer - Vistra Energy - 5	
Answer	Yes
Document Name	
Comment	
Vistra has no comments on this proposed change.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, 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	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #6.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
PNM supports EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Alison Mackellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	

Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	

Answer	Yes
Document Name	
Comment	
LouisvilleG&E/KU support EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
With reference to the definition of a “Generator Cold Weather Reliability Event” we believe the 20 MW minimum should apply not only to (1), but (2) and (3) as well. Having said that however, it is not clear how this 20 MW minimum would apply to dispersed generation, either collectively (say, in the case of a wind farm) or to their individual units. Various interpretations of its application are possible, and the requirement would benefit by including text which clearly shows exactly how the minimum would be applied to dispersed units.	
Likes 0	
Dislikes 0	
Response	
The 20 MW threshold is only applicable to a forced derate. Start-up failures and Forced Outages do not have a minimum MW threshold and are governed by the applicability section of EOP-012-1. The 20MW threshold in the definition of Generator Cold Weather Event was set	

intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E supports the addition of the 20 MW minimum, and supports the input provided by EEI on additional clarification on aligning the minimum threshold value with the BES Definition.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team appreciates your response and believes this change may be substantive in nature. The 20MW threshold in the definition of Generator Cold Weather Event was set intentionally and is applicable regardless of the type of generating resource. The SDT may consider any further alignment with the definition of the Bulk Electric System in Phase II of this project.	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3, Group Name OGE Energy	
Answer	Yes
Document Name	
Comment	
OG&E supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	

Response	
Thank you for the comment, please see response to EEI.	
Joe Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports comments from EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with the EEI and the NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to NAGF.	
Mark Spencer - LS Power Development, LLC - 5	

Answer	Yes
Document Name	
Comment	
We support the 20 megawatt threshold with the following caveats. We recommend that the SDT couple the MW threshold with a narrow dead band to the ECWT. If a generator is experiencing *any* derate due to a freezing issue, a minor derate may be signaling a potential weak link in its freeze protection measures. This derate would be particularly worrisome if the derate occurred at a temperature well exceeding the ECWT. Additionally, the proposed draft allows for an exemption from developing a CAP only if the derate is less than four hours, yet the proposed standard for existing generators is one hour. Clearly, a four hour derate is longer than the one hour standard, so what would be the CAP for a derate of less than 20 MW and greater than four hours (particularly if the derate started in the 2nd hour)? What would be the CAP for a derate of greater than 20 MW but starting in hour two? Would the CAPs simply state that the generator met the reliability standard and no further action is required?	
Likes 1	Vistra Energy, 5, Roethemeyer Dan
Dislikes 0	
Response	
Thank you for the comments. The SDT declines to expand the conditions in which a forced derate would qualify as a Generator Cold Weather Reliability Event at this time. The standard sets a minimum requirement that entities must meet. The one-hour provision in EOP-012-1 requirement R2 and the four-hour provision in the definition of Generator Cold Weather Reliability Event as it relates to EOP-012-1 requirement R6 are separate and should not be considered associated. The one-hour provision in EOP-012-2 requirement R2 is tied to the generator operating at its Extreme Cold Weather Temperature. The four-hour provision in the definition of a Generator Cold Weather Reliability Event is relates to when a CAP is required due to a derate when operating at or above its Extreme Cold Weather Temperature.	
Scott Kinney - Avista - Avista Corporation - 3	

Answer	Yes
Document Name	
Comment	
Avista supports the addition of a 20 megawatt minimum with the proposed Generator Cold Weather Reliability Event and its impact on GO responsibilities as it relates to CAPS within Requirement R6.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Brooke Jockin - Portland General Electric Co. - 1, Group Name Portland General Electric Co.	
Answer	Yes
Document Name	
Comment	
Portland General Electric Company supports the survey response provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	

Comment	
Avista supports the addition of a 20 megawatt minimum with the proposed Generator Cold Weather Reliability Event and its impact on GO responsibilities as it relates to CAPS within Requirement R6.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	

Southern Company agrees that the 20 MW minimum is appropriate.	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
LaKenya VanNorman - LaKenya VanNorman On Behalf of: Aaron Casto, Florida Municipal Power Pool, 6; Carl Turner, Florida Municipal Power Agency, 5, 3, 4, 6; Chris Gowder, Florida Municipal Power Agency, 5, 3, 4, 6; Dan O'Hagan, Florida Municipal Power Agency, 5, 3, 4, 6; David Owens, Gainesville Regional Utilities, 1, 5, 3; Jade Bulitta, Florida Municipal Power Agency, 5, 3, 4, 6; Neville Bowen, Ocala Utility Services, 3; - LaKenya VanNorman, Group Name Florida Municipal Power Agency (FMPA)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for the support.	
John Liang - Snohomish County PUD No. 1 - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Foung Mua, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Wei Shao, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; - Tim Kelley, Group Name SMUD / BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Gerry Adamski - Cogentrix Energy Power Management, LLC - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Imane Mrini - Austin Energy - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Eric Ruskamp - Lincoln Electric System - 6, Group Name LES	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for the support.	
Scott McGough - Georgia System Operations Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Donna Johnson - Oglethorpe Power Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for the support.	
Tony Skourtas - Los Angeles Department of Water and Power - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Sheila Suurmeier - Black Hills Corporation - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Micah Runner - Black Hills Corporation - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Josh Combs - Black Hills Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for the support.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Meaghan Connell - Public Utility District No. 1 of Chelan County - 5, Group Name PUD No. 1 of Chelan County	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	

Sean Steffensen - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Glenn Pressler - CPS Energy - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Devon Tremont - Taunton Municipal Lighting Plant - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Michael Watt - Oklahoma Municipal Power Authority - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Brian Evans-Mongeon - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Lindsey Mannion - ReliabilityFirst - 10	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for the support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for the support.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	
No Comment	
Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	
Document Name	
Comment	
“Please see comments submitted by the Edison Electric Institute”	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Lenise Kimes - City and County of San Francisco - 1,5 - WECC	
Answer	
Document Name	
Comment	
This does not apply to HHWP, so we choose to not weigh-in regarding this.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	
Document Name	
Comment	
Yes, AECI supports the suggested approach.	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	

7. The SDT believes that with the proposed modifications to EOP-012-1, the initial proposed implementation plan is appropriate with one change. The 18-month implementation time frame is for all revised and new requirements in EOP-012-1, except Requirements R1 and R2 which have a 60-month implementation time frame, and R4 which has a 78-month implementation time frame. Do you agree with this implementation time frame? If you think an alternate timeframe is needed, please propose an alternate implementation plan and time period, and provide a detailed explanation of actions planned to meet the implementation deadline.

Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
This implementation is so extended, that these requirements will not be in force when the next Texas winter weather event occures.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The referenced implementation timelines take into consideration the timelines associated with the effective date of EOP-011-2, and the timelines associated with R3, R5, R6 and R7. To the extent that phase two changes key portions of the phase one requirements, the SDT will review the implementation plans again.	

Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
The implementation plan must be reconsidered in light of the the changes recommended in these comments.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. To the extent that phase two changes key portions of the phase one requirements, the SDT will review the implementation plans again.	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No
Document Name	
Comment	
Talen Energy Marketing supports Talen Generation's comments.	
Likes 0	
Dislikes 0	
Response	
Please see response to Talen Generation.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation supports the 18-month implementation time frame. Reclamation disagrees with the 60-month and 78-month implementation time frames. A 5-6 year implementation period is inconsistent with the expedited time frame that has been applied to the standards development process. Reclamation recommends the time would be better spent to conscientiously develop a workable standard than to expedite a defective standard and provide 5-6 years to try to make it work.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The referenced implementation timelines take into consideration the timelines associated with the effective date of EOP-011-2, and the timelines associated with R3, R5, R6 and R7. To the extent that phase two changes key portions of the phase one requirements, the SDT will review the implementation plans again.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	
Excluding the concerns raised in previous questions, these proposed implementation times are reasonable except for R7. Since R1 and R2 are not enforceable until 60 months, then a CAP implementation for R7 identified under R2 should follow this, not precede this time interval.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The development of a CAP under R7 is also applicable to R6, so R7's implementation much match R6 as well. Since R2 has a longer implementation, the applicability of R7 relative to R2 matches that timeline. To the extent that phase two changes key portions of the phase one requirements, the SDT will review the implementation plans again.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	

Excluding the concerns raised in previous questions, these proposed implementation times are reasonable except for R7. Since R1 and R2 are not enforceable until 60 months, then a CAP implementation for R7 identified under R2 should follow this, not precede this time interval.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The development of a CAP under R7 is also applicable to R6, so R7's implementation much match R6 as well. Since R2 has a longer implementation, the applicability of R7 relative to R2 matches that timeline. To the extent that phase two changes key portions of the phase one requirements, the SDT will review the implementation plans again.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	No
Document Name	
Comment	
We recommend a twelve month implementation time frame for all revised and new requirements; and a three year implementation time frame for EOP-012-1 Requirements R1 and R2 as this seems to be a sufficient amount of time to become compliant given that the new requirements were included in The Joint Inquiry Report published on November 18, 2021, the additional year for standard development and regulatory review requirements. A twelve month implementation would only miss implementation for one winter (2023-2024).	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. To the extent that phase two changes key portions of the phase one requirements, the SDT will review the implementation plans again.	
Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen	
Answer	No

Document Name	
Comment	
ISO-NE reiterates its comments regarding the implementation plan from the Round 1 Comments. ISO-NE believes the proposed 18 months for the implementation is excessive due to the fact that the first requirements that become effective with this 18 months are carried over from EOP-011-2 R7 & R8 into EOP-012-1 R3 and R5. These requirements are already due to be effective April 1, 2023. These "new" requirements in EOP-012-1 have been written to provide further details required for a previously written Generator Cold Weather Preparedness Plan, and changed Training to Annual Training. Also, based on the CAP requirements in R6 and R7, "*A CAP shall be written within 150 days or by July 1st, whichever is earlier*" already provides some additional time from the original effective date for Generators that actually experience a trip attrinuted to freezing under the Standard. Determined by the NERC Board approval date, an effective date of 12 months will potentially include the majority of the Winter Season of 2023-2024 under R3 and R5 instead of pushing the Standard off for another winter season, which was a concern for the EOP-011-2 implementation plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The implementation timelines take into consideration the timelines associated with the effective date of EOP-011-2. To the extent that phase two changes key portions of the phase one requirements, the SDT will review the implementation plans again.	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	No
Document Name	
Comment	
MISO supports the comments submitted by the ISO/RTO Council Standards Review Committee (IRC SRC).	
Likes 0	

Dislikes 0	
Response	
Please see response to IRC SRC.	
Whitney Wallace - Calpine Corporation - 5 - WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
No for R6 only. R6 should read, "a [GO] that experiences a Generator Cold Weather Reliability Event shall develop a CAP, ***no longer than July 1…***." This will ensure that sufficient time is allotted for corrective actions to be developed that may take many months to plan and implement effectively in accordance with all design and code requirements. The primary focus of the GO if a GCWRE should occur should be to first implement immediate corrective actions that will allow the forced outage to be ended and the generating unit to be returned to service as safely and quickly as possible during an extreme cold weather event, and then develop long term corrective actions. Allowing for additional time for development of a CAP will allow for improved engineering solutions since more planning and engineering resources can be allocated to developing and implementing the correction actions(s). Additionally, the implementation of a CAP should be for up to 24 months due to supply chain challenges that the industry continues to experience.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. R6 requires the development of the CAP but it is up to the Registered Entity to determine the date of completion based on prudent business practices. R6 does not preclude the modification of a CAP once developed should supply chain or other challenges arise.	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	No

Document Name	
Comment	
The proposed implementation plan provides up to sixty months to implement the standard for individual units (eighteen months to identify the ECWT and develop a winterization plan and forty-two months to meet the reporting requirements), which could deter earlier compliance. Specifically, many units compete in wholesale markets and a unit owner may refrain from spending capital dollars (driving up its costs and thus its market bids) earlier than its competitors who delay compliance to later dates. In this way, the timeline works as a disincentive to early compliance. The SRC understands the need to recognize the complexities of winterization for different technologies and individual unit characteristics, but to avoid creating disincentives to earlier compliance, the SRC recommends a shorter period of twelve months to identify the ECWT and develop a winterization plan and an additional twenty-four months for all units (new and old) to comply with the winterization requirements and adding an exception process to the extent a GO can document compliance will take longer due to an individual unit's characteristics. The GO should have to document unit-specific exceptions and make the documentation available for review and audit. The SRC believes an implementation plan with an early, but realistic, compliance date that allows for reasonable exceptions avoids the disincentive created by a lengthy process that would allow even units facing minimal winterization requirements to refrain from complying earlier.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The requirements in EOP-012-1 do not extend or negate EOP-011-2 R7 and R8. GO's must be compliant with EOP-011-2 R7 and have implemented a cold weather preparation plan that includes freeze protection measures prior to the implementation of EOP-012-1. To the extent that phase two changes key portions of the phase one requirements, the SDT will review the implementation plans again.	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	

Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your review.	
Carl Pineault - Hydro-Qu?bec Production - 1,5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your review.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
DTE Electric supports NAGF comments provided for this project	

Likes 0	
Dislikes 0	
Response	
Please see response to NAGF.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees with EEI and supports the proposed implementation plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Avista supports the proposed Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Scott Kinney - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Avista supports the proposed Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Spencer - LS Power Development, LLC - 5	
Answer	Yes

Document Name	
Comment	
We appreciate the SDT's consideration of industry comments and the modifications to the implementation timeline.	
Likes 1	Vistra Energy, 5, Roethemeyer Dan
Dislikes 0	
Response	
Thank you for your support.	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with the EEI and the NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI and NAGF.	
Joe Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	

Xcel Energy supports comments from EEI.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI.	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3, Group Name OGE Energy	
Answer	Yes
Document Name	
Comment	
OG&E supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	

PG&E believes the implementation timeframes are reasonable. PG&E agrees with the concerns raised by EEI and NAGF that are noted in the input to the earlier questions.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI. And NAGF.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	Yes
Document Name	
Comment	
LouisvilleG&E/KU support EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	

Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Alison Mackellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes

Document Name	
Comment	
PNM supports the Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dan Roethemeyer - Vistra Energy - 5	
Answer	Yes
Document Name	
Comment	
The implementation timeline seems reasonable if the adopted standards are modified as recommended in these comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	
Comment	

Exelon supports the proposed implementation plan. Submitted on behalf of Exelon, Segments 1 & 3	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Stewart Rake - Luminant Mining Company LLC - 7	
Answer	Yes
Document Name	
Comment	
The implementation timeline seems reasonable if the adopted standards are modified as recommended in these comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	

Excluding the concerns raised in previous questions, the NAGF believes that the proposed implementation times are reasonable.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Shannon Ferdinand - Decatur Energy Center LLC - 5	
Answer	Yes
Document Name	
Comment	
Capital Power supports the North American Generators Forum (NAGF) response to this question.	
Likes 0	
Dislikes 0	
Response	
Please see response to NAGF.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Invenergy supports the proposed implementation time frame.	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	
Comment	
Acciona Energy has no comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	Yes
Document Name	
Comment	
Deanna Carlson, Cowlitz PUD, 5, 9/1/22	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Avista supports the proposed Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	
Invenergy supports the proposed implementation time frame.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	

Comment	
EEI supports the proposed Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
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; John Nierenberg, 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, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Brian Evans-Mongeon - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michael Watt - Oklahoma Municipal Power Authority - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Brooke Jockin - Portland General Electric Co. - 1, Group Name Portland General Electric Co.	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Devon Tremont - Taunton Municipal Lighting Plant - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Glenn Pressler - CPS Energy - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Sean Steffensen - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Lenise Kimes - City and County of San Francisco - 1,5 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Meaghan Connell - Public Utility District No. 1 of Chelan County - 5, Group Name PUD No. 1 of Chelan County	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Josh Combs - Black Hills Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Micah Runner - Black Hills Corporation - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Sheila Suurmeier - Black Hills Corporation - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tony Skourtas - Los Angeles Department of Water and Power - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, 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	
Thank you for your support.	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Johnson - Oglethorpe Power Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Scott McGough - Georgia System Operations Corporation - 3	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Eric Ruskamp - Lincoln Electric System - 6, Group Name LES	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Jamison Cawley - Nebraska Public Power District - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Steven Sconce - EDF Renewable Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Mark Young - Tenaska, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Imane Mrini - Austin Energy - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Adam Lee - MGE Energy - Madison Gas and Electric Co. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Gerry Adamski - Cogentrix Energy Power Management, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Foung Mua, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Wei Shao, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; - Tim Kelley, Group Name SMUD / BANC	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michelle Amarantos - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
John Liang - Snohomish County PUD No. 1 - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
LaKenya VanNorman - LaKenya VanNorman On Behalf of: Aaron Casto, Florida Municipal Power Pool, 6; Carl Turner, Florida Municipal Power Agency, 5, 3, 4, 6; Chris Gowder, Florida Municipal Power Agency, 5, 3, 4, 6; Dan O'Hagan, Florida Municipal Power Agency, 5, 3, 4, 6; David Owens, Gainesville Regional Utilities, 1, 5, 3; Jade Bulitta, Florida Municipal Power Agency, 5, 3, 4, 6; Neville Bowen, Ocala Utility Services, 3; - LaKenya VanNorman, Group Name Florida Municipal Power Agency (FMPA)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	
Document Name	
Comment	
Yes, AECI supports the suggested approach.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE appreciates the drafting team's efforts to make the implementation plan more clear by adding a graphic with the various effective and compliance dates. Texas RE is concerned, however, with the 60-month timeframe to comply with Requirements R1 and R2. Texas RE believes this poses a reliability risk and that entities should implement freeze protection measures and provide the capability to operated for at least one hour at the unit(s) Extreme Cold Weather Temperature as soon as possible in order to ensure there is no reliability gap.	

In the ERCOT region, generation entities were not given five years to comply with weather emergency preparedness rules and required to complete winter weather emergency preparation measures by December 1, 2021. These measures included winterization, operation readiness, structural preparations, enclose sensors for cold weather critical components, address cold weather critical components failures that occurred between November 30, 2020, and March 1, 2020, provide training on winter weather preparations, and determine minimum design temperature or minimum experienced operating temperature, among other items.

Texas RE understands the intent of compliance various thresholds set forth in both Requirements R1 and R2 is to recognize that existing generation resources may find it more difficult to retrofit appropriate freeze protection measures. Texas RE understand the technical rationale for requiring existing units to ensure capability of operating for at least one hour at the Extreme Cold Weather Temperature (R2) whereas new generation should be able to demonstrate it can operate for 12 hours at the Extreme Cold Weather Temperature given the putative differences between newer and older generating units.

While Texas RE notes that the recently implemented Texas rules do not recognize this distinction between new and existing resources, Texas RE believes that the current proposed EOP-012-1 R1 and R2 define the scope of "existing" resources too broadly by appearing to connect the definition of "existing" resources to the effective date of the standard requirement. Instead, Texas RE recommends the language in Requirements R1 and R2 reference the effective date of the governmental authority's order approving EOP-012-1. The effective date of the FERC order puts new and existing generating entities on notice that they will need to comply with the standard by the compliance date, obviating the need to extend the lower R2 compliance thresholds for "existing" resources to units constructed following the effective date of the FERC order. Otherwise, generating units built as much as 60 months from the FERC order date will be treated as "existing" units subject to the lower R2 requirements. As Texas RE stated above, entities should not have five years to comply with these requirements, but at a minimum, resources constructed within this five-year window should not be treated as "existing" resources, but rather be required to meet the 12-hour requirements for new generation resources.

Finally, Texas RE recommends clarifying the first section of the graphic to say that it is the Effective date of the Governmental Authorities' approval of EOP-012-1 and the implementation plan. This is consistent with the language in the paragraph below regarding the effective date

of EOP-012-1. Texas RE furthermore recommends that the Standard EOP-012-1 section on page 4 specify that the effective date of the standard applies to all requirements unless specified for a different compliance date or initial performance date.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has modified the graphic in the implementation plan to reflect Texas RE's suggested edit. The suggested edit to the Standard EOP-012-1 section on Page 4 has been referred to NERC Legal to consider changing in the Implementation Plan template. To the extent that phase two changes key portions of the phase one requirements, the SDT will review the implementation plan timelines again.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	
Document Name	
Comment	
"Please see comments submitted by the Edison Electric Institute"	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI.	

8. The SDT proposes that the modifications in the proposed EOP-012-1 meet the key recommendations in The Report 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.

LaKenya VanNorman - LaKenya VanNorman On Behalf of: Aaron Casto, Florida Municipal Power Pool, 6; Carl Turner, Florida Municipal Power Agency, 5, 3, 4, 6; Chris Gowder, Florida Municipal Power Agency, 5, 3, 4, 6; Dan O'Hagan, Florida Municipal Power Agency, 5, 3, 4, 6; David Owens, Gainesville Regional Utilities, 1, 5, 3; Jade Bulitta, Florida Municipal Power Agency, 5, 3, 4, 6; Neville Bowen, Ocala Utility Services, 3; - LaKenya VanNorman, Group Name Florida Municipal Power Agency (FMPA)

Answer	No
Document Name	

Comment

R3.2 and R3.3 are unnecessary from a performance-based standard perspective. Requiring a CAP for any failure to run or any derate from a cold weather event is sufficient to provide performance under the standard. However, requiring the creation of lists of equipment and protective measures, while good engineering practice, are not good compliance activities. This results in administrative burden for administration's sake.

In addition, the standard is full of subjective, ambiguous, and in-auditable language. Phrases like "typically available", and provisions that allow for any "technical, commercial or operational constraints" as defined by the GO are subjective and open to interpretation, and will compliance certainty difficult for entities. This includes referencing non-NERC contracts such as OATTs or "other contracatual arrangement[s]" in the Applicability language. All of these factors will result in a high compliance burden and risk of fines and significant capital spends on upgrades due to standard uncertainty and ambiguity.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. R3.2 and R3.3 are recommendations from the Joint Inquiry Report and are within the scope of the SAR. The NERC document *Results-Based Reliability Standard Development Guidance* states that Reliability Standards should be viewed as a portfolio of

requirements designed to achieve an overall defense-in-depth strategy and “where each requirement in a [Standard] has a role in preventing system failures…” The SDT feels the requirements in question meets that threshold by identifying components subject to risk from freezing and the relevant freeze protection measures implemented to protect against freezing. Finally, the SDT has made some clarifying changes to the language of the applicability section that may address some of your concerns.	
Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
For EOP-012-1, Invenergy is unable to quantify the overall costs and benefits to arrive at a definitive conclusion about the cost effectiveness of the current draft. However, as noted in Invenergy’s previous responses, the current proposal yields an arbitrarily stringent standard that could impose more onerous requirements than are necessary to ensure generator availability during the prolonged extreme cold events – occurring over multiple hours or days – that this Standard is intended to address. The alternative approach Invenergy suggests would reasonably be expected to yield a more cost-effective approach to meeting the key recommendations in the Joint Inquiry Report. Invenergy also remains concerned that certain generating units, including independent power producers, may be required to bear significant incremental costs to comply with the standard without a corresponding mechanism for recovering those costs.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The team believes that the proposed draft meets the intent of the recommendations in the report and yields a reasonable standard. Strikes a balance between the recommendations in the cold weather report for an industry wide standard by allowing entities to calculate the cold weather temperatures for its geographic location and determine the necessary freeze protection measure to meet the requirements of the standard. The team has previously discussed cost recovery in the response to comments on the initial ballot.	

Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	
The SRC believes the proposed revisions do not meet the key recommendations, regardless of whether they are "cost effective" (based on our comments, above). If the goal of this Standard is to ensure generators ride-through extreme weather events, the SDT should draft a Standard to accomplish that goal. NERC should leave the issue of compensation to FERC and other regulators to determine how to compensate GOs for the cost of winterization and freeze protection measures (*e.g.*, areas of the country using cost-based rates could include the cost of upgrades in the rate base to establish customer pricing; parts of the country with wholesale markets can develop market tools to provide compensation to generators who upgrade resources). *See*, Key Recommendation 2 in the Joint Report.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	No
Document Name	
Comment	
Agree with comments provided by Russell Noble.	
Likes 0	
Dislikes 0	

Response	
Please see response provided to Russell Noble.	
Russell Noble - Cowlitz County PUD - 3	
Answer	No
Document Name	
Comment	
Cowlitz agrees with comments provided by the North American Generator Forum.	
Likes 0	
Dislikes 0	
Response	
Please see response to NAGF.	
Whitney Wallace - Calpine Corporation - 5 - WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
No for R5 only. The R5 requirement should focus on the content of the training to be given, the desired audience of that training, and the completion date. Requiring identification of the entity responsible for actually giving the training in the requirement will not increase the efficacy of the training material. It simply creates an administrative item to be tracked that adds nothing to generating unit reliability. Content, audience and completion of the required training accomplish that, not the denotation of who will be performing the training.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. EOP-012-1 R5 was moved from EOP-011-2 and only modified with the word “annual” to meet Key Recommendation 1e in the report.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
For EOP-012-1, Invenergy is unable to quantify the overall costs and benefits to arrive at a definitive conclusion about the cost effectiveness of the current draft. However, as noted in Invenergy’s previous responses, the current proposal yields an arbitrarily stringent standard that could impose more onerous requirements than are necessary to ensure generator availability during the prolonged extreme cold events – occurring over multiple hours or days – that this Standard is intended to address. The alternative approach Invenergy suggests would reasonably be expected to yield a more cost-effective approach to meeting the key recommendations in the Joint Inquiry Report. Invenergy also remains concerned that certain generating units, including independent power producers, may be required to bear significant incremental costs to comply with the standard without a corresponding mechanism for recovering those costs.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The team may take your comments into consideration in phase two of this project. The team cannot comment on cost recovery mechanisms at this time. Please note that the SDT performed spot reviews of existing fleets of generating assets that currently operate in extreme cold weather and to the extent that these units are employing current industry best practices, the SDT feels that the additional compliance documentation in meeting the proposed new standard will not be significant in either cost or effort.	
Shannon Ferdinand - Decatur Energy Center LLC - 5	

Answer	No
Document Name	
Comment	
Capital Power supports the North American Generators Forum (NAGF) response to this question.	
Likes 0	
Dislikes 0	
Response	
Please see response to NAGF.	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	No
Document Name	
Comment	
MISO supports the comments submitted by the ISO/RTO Council Standards Review Committee (IRC SRC).	
Likes 0	
Dislikes 0	
Response	
Please see response to IRC SRC.	
Mark Young - Tenaska, Inc. - 5	
Answer	No
Document Name	
Comment	

This is essentially a return on investment question. It is difficult to answer this question until there is an understanding of total cost recovery required to implement this design standard for the entire BES. The Report's #2 recommendation was for markets or consumers to provide cost recovery. While NERC cannot mandate cost recovery, NERC can provide exemptions for compliance until markets and regulatory agencies determine the need and the method of compensating Generator Owners for their investment in winter weatherization.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The team has previously discussed cost recovery in the response to comments on the initial.	
Steven Sconce - EDF Renewable Energy - 5	
Answer	No
Document Name	
Comment	
EDFR supports the comments submitted by NAGF.	
Likes 0	
Dislikes 0	
Response	
Please see response to NAGF.	
Carl Pineault - Hydro-Qu?bec Production - 1,5	
Answer	No
Document Name	
Comment	

For Canadian entites, the necessary cold weather practices are already in place. The administrative burden associated to the tasks being required in the standards outweigh the reliability benefits, as we already have a good handle on planning, operations and maintenance activites in cold (and even extreme cold) weather.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The team believes that for entities that have implemented adequate freeze protection measures, implementing this standard will require minimal effort. Please note that the SDT performed spot reviews of existing fleets of generating assets that currently operate in extreme cold weather and to the extent that these units are employing current industry best practices, the SDT feels that the additional compliance documentation in meeting the proposed new standard will not be significant in either cost or effort.	
Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen	
Answer	No
Document Name	
Comment	
ISO-NE supports the comments of the SRC that cost recovery mechanism be left to FERC and the Industry to determine how to compensate GOs for any upgrades if needed.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No

Document Name	
Comment	
The NAGF does not agree that the draft EOP-012 addresses the concerns from the Report in a cost-effective manner. The NAGF is concerned that the proposal, while a great improvement from the initial posting, fails to address the concerns from the Report in several areas. These areas include: • The proposed standard does not require significant changes beyond calculating the Extreme Cold Weather Temperature and listing components susceptible to the cold weather. • The design requirements only require the Generator Owner to identify why nothing was done, not make changes to the design to make the generator more reliable during winter. As the SDT is trying to address the issue of retrofit without being able to address the compensation issue, we understand why this compromise is being proposed. • The Report states that many units failed before reaching their minimum design criteria. The proposed standard does not require a CAP if this occurs. The CAP is only required if a failure occurs above the ECWT, which has no significant meaning to a generator's design capability. This feature also appears to undermine the requirement to provide the BA, TOP and RC with a minimum operating temperature to be used during the planning process. • The proposed standard does require generators to address the conditions seen, specifically temperature, wind and moisture combined. For example, a wind turbine is likely able to operate to a minimum temperature of 20 degrees Fahrenheit if it is dry but will have blade icing occur at 32 degrees Fahrenheit if there is moisture. If the ECWT for that site is 25, a CAP will be required for blade icing, but not if the nacelle ices at 22 degrees due to failure to close vents.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The team maintains that this standard is the first step in more reliability operation during cold weather and will continue to discuss communication between the BA, TOP, RC and GO, in addition to other topics, in the second phase of this project.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	

Comment	
AES Clean Energy supports comments submitted by NAGF.	
Likes 0	
Dislikes 0	
Response	
AES Clean Energy supports comments submitted by NAGF.	
Stewart Rake - Luminant Mining Company LLC - 7	
Answer	No
Document Name	
Comment	
The modifications in proposed EOP-012-1 continue to raise cost effectiveness concerns, because the standards are tied to a very conservative temperature standard of the 0.2 percentile lowest hourly temperature experienced at the closest weather station since Jan. 1, 2000. Generators in the TRE region have no mechanism for cost recovery for any capital expenditures or other expenses they incur to implement the new standards. Generators in other reliability regions similarly may not have the ability to recover costs to implement weather preparedness standards, especially if they are not rate regulated companies. If the standards are revised as recommended throughout Vistra's comments (and the comments being filed by Texas Competitive Power Advocates, of which Vistra is a member), then the standard would meet the key recommendations in The Report in a cost-effective manner. However, if the standard is adopted as currently proposed, there would be serious questions regarding the cost-effectiveness of the standard, and it could even lead to early retirements or cancellations or delays of new resources.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The team has previously discussed cost recovery in the response to comments on the initial ballot.	

LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 6	
Answer	No
Document Name	
Comment	
Refer to above comments	
Likes 0	
Dislikes 0	
Response	
Please see responses above.	
Dan Roethemeyer - Vistra Energy - 5	
Answer	No
Document Name	
Comment	
The modifications in proposed EOP-012-1 continue to raise cost effectiveness concerns, because the standards are tied to a very conservative temperature standard of the 0.2 percentile lowest hourly temperature experienced at the closest weather station since Jan. 1, 2000. Generators in the TRE region have no mechanism for cost recovery for any capital expenditures or other expenses they incur to implement the new standards. Generators in other reliability regions similarly may not have the ability to recover costs to implement weather preparedness standards, especially if they are not rate regulated companies. If the standards are revised as recommended throughout Vistra's comments (and the comments being filed by Texas Competitive Power Advocates, of which Vistra is a member), then the standard would meet the key recommendations in The Report in a cost-effective manner. However, if the standard is adopted as currently proposed, there would be serious questions regarding the cost-effectiveness of the standard, and it could even lead to early retirements or cancellations or delays of new resources.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. The team has previously discussed cost recovery in the response to comments on the initial ballot. Please note that the SDT performed spot reviews of existing fleets of generating assets that currently operate in extreme cold weather and to the extent that these units are employing current industry best practices, the SDT feels that the additional compliance documentation in meeting the proposed new standard will not be significant in either cost or effort.	
Sheila Suurmeier - Black Hills Corporation - 1,3,5,6	
Answer	No
Document Name	
Comment	
BHC agrees with the first statement but cannot determine cost effectiveness and offers no comment on cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Micah Runner - Black Hills Corporation - 1	
Answer	No
Document Name	
Comment	
BHC agrees with the first statement but cannot determine cost effectiveness and offers no comment on cost effectiveness.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment.	
Josh Combs - Black Hills Corporation - 3	
Answer	No
Document Name	
Comment	
BHC agrees with the first statement but cannot determine cost effectiveness and offers no comment on cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Claudine Bates - Black Hills Corporation - 6	
Answer	No
Document Name	
Comment	
BHC agrees with the first statement but cannot determine cost effectiveness and offers no comment on cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	

Answer	No
Document Name	
Comment	
The recommendations are inherently not cost-effective for Generator Owners, so changing the standard language will not make them so.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	
The recommendations are inherently not cost-effective for Generator Owners, so changing the standard language will not make them so.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	

Reclamation observes that the SDT has asserted that it has the support of industry except for minor details in the standard and is promising improvements in “Phase 2” of this project. Reclamation can identify no basis for this assertion based on the failure of the previous ballot and the refusal of this SDT and other SDTs to modify “legacy” language in subsequent standards modification projects once language has been approved. Reclamation asserts that a two-phase approach to developing standards that inherently requires re-versioning Phase 1 standards in Phase 2 is not cost effective. Reclamation recommends a good approach to promulgating quality standards is not to force a defective product through the system but rather to spend the necessary time to make the product right the first time. Reclamation observes that many entities have provided direct suggestions for improvement starting with Draft 1 of this project, but the SDT took neither the time nor the effort to properly consider them.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The project was designed to be completed in two phases based on the key recommendation deadlines in the report as well as the deadline from the NERC Board of Trustees. Since the two groups of recommendations work together, the team will be taking industry comments from this draft into consideration in phase two when more modifications are made to address the second group of recommendations.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy is of the opinion that the recommended alternative for Requirement 2 discussed previously in response to Question 5 is a more cost-effective manner to address the reliability concerns of generation not operating as planned during extreme cold weather.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. Please see response to Question 5.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
At this time PG&E cannot determine if the proposed modifications are cost effective.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Mark Spencer - LS Power Development, LLC - 5	
Answer	No
Document Name	
Comment	
Most BAs in the US are summer peaking systems (the seasonal spread increases to the south), and a significant fraction of generation is located in the RTOs with annual capacity markets that offer no distinction between summer peaking generators and all others generators. Consequently, the proposed standard will impose a requirement on a significant number of generators that are not needed to meet the winter load. Moreover, generators that historically have not been needed to serve winter load typically do not procure firm transportation rights or forward contract for fuel. This forces generators that may or may not be able to obtain fuel and have historically not been needed to serve winter load to incur the cost of compliance. Regardless whether these costs are born by the ratepayer or absorbed by	

the generator owner, this is not a cost effective outcome. A cost effective approach, while enhancing reliability, would be to procure the exact quantity, and no more, of reliable generation necessary to prevent wide-scale manual load shedding. We reiterate that the BAs are best positioned to quantify their needs under a range of weather scenarios aligned with their Emergency Operating Plans, to specify an absolute performance requirement (inclusive of weather, fuel, environmental restrictions, etc.), and levy penalties for non-performance in the most cost effective manner. As an example, if a BA procured sufficient weatherized winter supply backed by certain fuel, the SDT's concern of "premature retirements" would be moot. Additionally, the Regional Entities' would have bright line criteria to apply to determine whether generator owners are complying with any commitments made to their BAs.	
Likes 1	Vistra Energy, 5, Roethemeyer Dan
Dislikes 0	
Response	
Thank you for your comment. The team has previously discussed cost recovery in the response to comments on the initial ballot. The team will take your comments about BA's into consideration during the drafting in phase two.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	No
Document Name	
Comment	
Without a definition of "commercial constraints" it is difficult to know how R1 and R7 should be evaluated for compliance. We recommend the Standard Drafting Team make it clear in the standard that "commercial constraint" is limited to the inability to obtain necessary equipment or services after reasonable efforts due to supply issues or unavailability of services. Without this limitation, "commercial constraints" could be interpreted to mean cost prohibitions or economic pressures on the commercial profitability of a unit. It is our understanding that cost prohibitions or economic pressures are not intended to be acceptable justifications for not implementing freeze protection measures.	
Likes 1	LS Power Development, LLC, 5, Spencer Mark
Dislikes 0	

Response	
Thank you for your comment. The team may take your comments about additional clarity around commercial constraints into consideration during phase two of the project.	
Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1	
Answer	No
Document Name	
Comment	
NextEra Energy is not supplying a position or comment on the cost effectiveness of these proposed changes.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
We believe that establishing a new Extreme Cold Weather Temperature may result in the need for costly upgrades to coal handling facilities, which may only become apparent during the implementation period. Generator Owners will be reluctant to make these costly investments unless and until the need for them is proven.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The team has discussed the extreme cold weather temperature at length and declines to make any changes at this time.	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No
Document Name	
Comment	
Talen Energy Marketing supports Talen Generation's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to Talen Generation.	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
The cost-effective sequence of events for bolstering generation plant cold weather protection is to firstly obtain valid capability data (based on WCT or DBT-plus-20 mph, not DBT alone), then have RCs, BAs and TOPs identify their true reserve margins for extreme cold weather events. These parties can then adopt the appropriate market solutions – incentivizing upgrades where shortages are predicted, and accepting the status quo where no action is needed. EOP-012-1 presently takes an extremely non-cost-effective approach, immediately leaping to a draconian and unnecessary requirement for retrofitting of existing units. This problem is exacerbated by using an incorrect basis for Extreme Cold Weather Temperature (DBT only, instead of WCT or DBT-plus-20 mph) and an incorrect protect-to target (0.2 percentile instead of historical worst-case weather). GOs can thereby be lured into installing inadequate protection, setting them up for immense market losses for 43 hours per decade (or more) if sold-	

ahead and, due to freeze-up, having to buy power on the spot market at prices that can reach $1000/MWh or higher (large units can lose $1MM per hour in this fashion). This situation also paves the way for having to tear-out marginal, EOP-012-1-based heat tracing/insulation systems that fail to protect as hoped and start over as an R6 CAP. It also bears mentioning that the ultimate, "low hanging fruit," for enhancing BES wintertime reliability is to put additional generation units online out-of-merit when an extreme storm is impending, since it is far easier to keep a unit running during severe weather than it is to start-up under such circumstances. EOP-012-1 may not be the place to address this issue, but until NERC acts in this respect, or at least encourages ISOs to act, it is not apparent that a sincere effort is being made regarding cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The team has discussed the extreme cold weather temperature at length and declines to make any changes at this time. The team believes that bringing units online out-of-merit is out of scope of this phase for this team.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	
DTE Electric supports NAGF comments provided for this project	
Likes 0	
Dislikes 0	
Response	
Please see response to NAGF.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No

Document Name	
Comment	
The modifications continue to burden small utilities who already operate in sub-freezing weather. These requirments put significant burden on staff unnecessarily, and expose the parent company to administrative penalties, not performance penalties.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please note that the SDT performed spot reviews of existing fleets of generating assets that currently operate in extreme cold weather and to the extent that these units are employing current industry best practices, the SDT feels that the additional compliance documentation in meeting the proposed new standard will not be significant in either cost or effort.	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your review.	
Brooke Jockin - Portland General Electric Co. - 1, Group Name Portland General Electric Co.	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your review.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Avista supports the proposed change to the standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	
Comment	
Acciona Energy supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.	
Likes 0	
Dislikes 0	

Response	
Please see response to MRO NSRF.	
Adam Lee - MGE Energy - Madison Gas and Electric Co. - 4	
Answer	Yes
Document Name	
Comment	
Madison Gas and Electric supports the comments of the MRO NSRF	
Likes 0	
Dislikes 0	
Response	
Please see response to MRO NSRF.	
Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3	
Answer	Yes
Document Name	
Comment	
Madison Gas and Electric supports the comments from the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Please see response to MRO NSRF.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	

Answer	Yes
Document Name	
Comment	
MidAmerican Energy supports the MRO NSRF comments for this question.	
Likes 0	
Dislikes 0	
Response	
Please see response to MRO NSRF.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
The MRO NSRF agrees EOP-012-1 meets the key recommendations in The Report in a cost effective manner. The sum of all the components of the proposed Standard as written create a balanced approach between the need to improve grid reliability and resiliency during cold weather events and the need to participate in a competitive market.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes

Document Name	
Comment	
Alliant Energy supports the comments submitted by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Please see response to MRO NSRF.	
Jamison Cawley - Nebraska Public Power District - 1	
Answer	Yes
Document Name	
Comment	
NPPD agrees EOP-012-1 meets the key recommendations in The Report in a cost effective manner. The sum of all the components of the proposed Standard as written create a balanced approach between the need to improve grid reliability and resiliency during cold weather events and the need to participate in a competitive market.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Alison Mackellar - Constellation - 5	
Answer	Yes
Document Name	

Comment
EOP-012 achieves a cost effective solution because of the exemptions built in R7 for technical, commercial, or operational constraints that may apply to a particular generator. Constellation notes, however, that the standard could provide greater clarification that lack of cost recovery is a commercial constraint to implementation of Requirement R1 and any Corrective Action Plan (CAP) under Requirement R2 or exception under Requirement R7. It is critical that any adopted weatherization requirements clearly ensure that lack of cost recovery is included under the qualified “commercial” constraints listed in Requirements R1, R2 and R7 and specifically outline how determinations for each category of constraint will be decided. In addition, under Requirement R2, Generator Owners should have the option to develop and implement a CAP or be allowed to explain in a declaration why corrective actions are not being implemented due to any technical, commercial, or operational constraints as defined by the Generator Owner. These options should not be across two separate Requirements (R2 and R7) within the draft standard. Streamlining R2 and R7 into one Requirement will create efficiencies in compliance for Generator Owners and in compliance monitoring reviews for the NERC Regional Entities. Kimberly Turco, on behalf of Segments 5 and 6

Likes 0	
Dislikes 0	

Response
Thank you for your comment. The team may take your comments about additional clarity on commercial constraint into consideration during phase two of the project. The team discussed the structure of the CAP requirement across multiple requirements and determined the current structure in the draft standard for the declaration to be in Requirement R7 which applies to all previous CAPs and declines to make any changes at this time.

Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	

EOP-012 achieves a cost effective solution because of the exemptions built in R7 for technical, commercial, or operational constraints that may apply to a particular generator. Constellation notes, however, that the standard could provide greater clarification that lack of cost recovery is a commercial constraint to implementation of Requirement R1 and any Corrective Action Plan (CAP) under Requirement R2 or exception under Requirement R7. It is critical that any adopted weatherization requirements clearly ensure that lack of cost recovery is included under the qualified "commercial" constraints listed in Requirements R1, R2 and R7 and specifically outline how determinations for each category of constraint will be decided. In addition, under Requirement R2, Generator Owners should have the option to develop and implement a CAP or be allowed to explain in a declaration why corrective actions are not being implemented due to any technical, commercial, or operational constraints as defined by the Generator Owner. These options should not be across two separate Requirements (R2 and R7) within the draft standard. Streamlining R2 and R7 into one Requirement will create efficiencies in compliance for Generator Owners and in compliance monitoring reviews for the NERC Regional Entities.

Kimberly Turco, on behalf of Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The team may take your comments about additional clarity on commercial constraint into consideration during phase two of the project. The team discussed the structure of the CAP requirement across multiple requirements and determined the current structure in the draft standard for the declaration to be in Requirement R7 which applies to all previous CAPs and declines to make any changes at this time.

Joe Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC

Answer	Yes
Document Name	

Comment

Xcel Energy can support the cost-effectiveness of implementing this Standard, predicated on the ability that R2 is tied to R6 and, subsequently, R7. The ability to declare qualifying units as unable to implement corrective actions is a required element for Xcel Energy to support the implementation of this Standard in a cost-effective manner.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Scott Kinney - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Avista supports the proposed change to the standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	

Avista supports the proposed change to the standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southen Company agrees that the proposed requirements are cost effective assuming the exceptions provided in R1 and R7 remain the same.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment.	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
John Liang - Snohomish County PUD No. 1 - 6	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michelle Amarantos - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Foung Mua, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; Wei Shao, Sacramento Municipal Utility District, 3, 5, 6, 4, 1; - Tim Kelley, Group Name SMUD / BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Eric Ruskamp - Lincoln Electric System - 6, Group Name LES	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Scott McGough - Georgia System Operations Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Johnson - Oglethorpe Power Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, 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	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Tony Skourtas - Los Angeles Department of Water and Power - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Meaghan Connell - Public Utility District No. 1 of Chelan County - 5, Group Name PUD No. 1 of Chelan County	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Glenn Pressler - CPS Energy - 3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Devon Tremont - Taunton Municipal Lighting Plant - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michael Watt - Oklahoma Municipal Power Authority - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Brian Evans-Mongeon - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
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; John Nierenberg, 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, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Gerry Adamski - Cogentrix Energy Power Management, LLC - 5	
Answer	
Document Name	
Comment	
CEPM believes that as an IPP (non-Utility) there needs to be better defined means for IPPs to recoup costs for modification of existing units to operate to the minimum operating temerpature prior to R2 becoming enforcable. We believe the SDT does have an obligation with support of these approaches along with the GO and ISO/RTO.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The team has previously discussed cost recovery in the response to comments on the initial ballot.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	
No Comment	
Likes 0	
Dislikes 0	
Response	

Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	
Document Name	
Comment	
At this time, SIGE is unable to quantify if the modifications will be cost-effective.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	
Document Name	
Comment	
“Please see comments submitted by the Edison Electric Institute”	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI.	
Lenise Kimes - City and County of San Francisco - 1,5 - WECC	
Answer	

Document Name	
Comment	
Difficult to weigh-in since actual potential costs are unknown at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	
Document Name	
Comment	
LouisvilleG&E/KU support EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE recommends the SDT consider including parameters or examples for when the use of a technical, commercial, or operational constraint is justifiable for not implementing a CAP in Requirement R7. The use of the phrase "as defined by the Generator Owner" is broad and could lead to reliability gaps.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, the team may take this into consideration during phase two of the project.	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3, Group Name OGE Energy	
Answer	
Document Name	
Comment	
OG&E supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	
Document Name	
Comment	

Yes, AECI supports the suggested approach.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	

9. Provide any additional comments for the standard drafting team to consider, including the provided technical rationale document, if desired.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	
Document Name	
Comment	
The focus needs to be on those entities who have failed to perform during cold weather, and should not impact those who operate facilities located and operated in cold climates where freezing temperatures are common. The standard and VSLs all point to admistrative activities and not performance activities. This creates a nighmare during audits and exposure to many companies who should not be considered risks.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Standard Drafting Team is appreciative of the comments provided. We believe that facilities that have historically operated well during freezing temperatures are well positioned to meet the new requirements of EOP-012-1.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	
Document Name	
Comment	
AECI has 2 additional comments for this standard not covered in the previous comment sections. These comments are specific to R5 and R6 respectively.	

R5: In regards to the proposed verbiage requiring “generating unit-specific training”, it is our opinion that this could be overly burdensome for stations with multiple units; particular for those stations with multiple units of a similar design (a.k.a. “sister” units). Recommend modifying this
requirement to require station-specific training in lieu of generating unit-specific training. It is our opinion that this modification will allow the GO/GOP the flexibility to develop their training modules with an appropriate level of detail so as to sufficiently train station personnel without requiring them to create multiple modules with similar or identical content.

R6: Concerning the proposed timeline for the development of a CAP, it is our recommendation that the July 1st date be removed from this requirement. The rationale for this recommendations is thus: 150 days prior to July 1st is Feb 1st for non-leap years and Feb 2nd for leap years. Moreover, the July 1st timeline is further condensed if a Generator Cold Weather Reliability Event (GCWRE) occurs in March or April. Lastly, the stated intent of the timeframe options within the Technical Rationale is to allow GO’s to review multiple events holistically following a winter season. In certain areas of the country, a GCWRE could realistically occur as early as late-October. In this instance, the latest possible date for the development of a CAP would be March 30th.

Given that it is also realistic for a GCWRE to occur in March, 150 days seems a reasonable number of days to cover all but the most extreme scenarios. Therefore, we recommend removing the hard deadline of July 1st.

Thank you for the opportunity to comment. AECI thanks the standard drafting team for their diligence and commitment to improve system reliability with an expedited timeline.

Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The Standard Drafting Team is appreciative of the comments provided. With regards to unit vs site specific training, this is approved language and the team believes that training can be developed holistically with unit-specific differences highlighted where applicable. Additionally, we believe 150 days is a reasonable timeframe to act to develop a CAP.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	
Document Name	
Comment	
General area aspects have not been captured to help determine the extreme weather temperature aspect. Geographic guidance from the BA could be beneficial. From a technical view should we have some type of forwarding looking element.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Standard Drafting Team is appreciative of the comments provided. We believe the Generator Owner to be in the best position to determine the Generator Cold Weather Temperature.	
Diana Torres - Imperial Irrigation District - 6	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	

Thank you for the comment.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	
Document Name	
Comment	
DTE Electric supports NAGF comments provided for this project	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see response to NAGF.	
Donald Lock - Talen Generation, LLC - 5	
Answer	
Document Name	
Comment	
Talen Energy supports the supplemental comments of the NAGF, and adds those presented below. {C}1. {C}R1 says that GO/GOPs must, "Explain in a declaration, any technical, commercial, or operational constraints," but there is no mechanism for these inputs to be conveyed to RCs, BAs and TOPs. Such limitations should be declared in R3.5 of EOP-012-1, and R3.5 should be amended to require that data be sent to RCs, BAs and TOPs. {C}2. {C}The exceptions of the second bullet point of R1 should be revised to disallow failure to winterize new units simply because the owners don't feel like spending the money. Reliability standards should set the rules for being allowed to sit at the table. Perhaps the	

expression, “preclude the ability,” was not meant to grant carte blanche in this respect, but if so it is an example of the need for use of clear language in reliability standards.

If there is an implied regulatory hurdle to be cleared in this respect, as opposed to relying solely on the judgment of GOs, guidance is required in EOP-012-1 for emerging technologies such as preventing ice accumulation on wind turbine blades. It may not be possible to set firm rules in such cases, but NERC should create incentives to advance the state of the art (the “best available technology”) rather than permanent loopholes.

{C}3. {C}The “demonstrates” of M1 should be limited to major freeze prevention measures, such as heat tracing/insulation systems and wind turbine nacelle heating. GOs should not have to obtain design calculations for every lube/seal oil reservoir heater, building heater, enclosure heater and other minor winterization measure for plants built many decades ago, especially since there are no calculations for wind barriers, CTG inlet air heaters and the like.

{C}4. {C}The entry, “features. Any,” in M1 should be, “features, any.”

{C}5. {C}The, “add new or modify,” language of R2 should be expunged, as well as the percentile based performance criterion of the Extreme Cold Weather Temperature definition, for the reasons given earlier in these comments. The CAPs of R2 should allow revising the capability declaration of R3.5.2 in lieu of modifying the facility, again as explained earlier.

{C}6. {C}The Extreme Cold Weather Temperature criterion should be replaced in R3.1, and everywhere else it is used in EOP-012-1, with the historical worst-case WCT (or DBT-with-20 mph wind value), as mentioned previously. The only calculations then required involve converting DBT+wind values to WCT, which is so simplistic that there’s no need to document the math as compliance evidence.

{C}7. {C}The Guidance section of EOP-012-1 should explain that the high level of uncertainty inherent in winterization makes it unnecessary to seek perfection in compiling weather data for R3 of EOP-012-1. Readings from the nearest airport are acceptable, and in fact are often more accurate than plant measurements. Non-official sources of weather data are acceptable so long as they have a reputable basis, e.g. extremeweatherwatch.com draws its information from the NOAA database.

{C}8. {C}Revise or eliminate R3.2, “Documentation identifying the Generator Cold Weather Critical Components,” as discussed earlier in these comments.

{C}9. {C}Revise R3.3 in accordance with our earlier comments, i.e.

{C}- include congealing when defining the term “freezing”

{C}- have precipitation stand separate from temperature/wind-related considerations

{C}- differentiate between principal and secondary winterization measures

{C}- cover temperature and wind in a combined fashion (WCT, or DBT-plus-20 mph)

Regarding the last of these points, DBT and wind speed are inputs to a single heat transfer calculation, ref. the formulae in IEEE-515, and must therefore be handled together. Calling for identification of DBT capability and, separately, “the cooling effects of wind,” is like identifying the load capability of a generator in terms of voltage, with separate consideration of the effect of current.

{C}10. {C}R3.5 is unchanged from EOP-011-2 and might therefore be thought to be noncontroversial, but this earlier standard is not yet enforceable, so no case law has been developed to bring its ambiguities and omissions into focus. These gaps should be closed in the Guidance section of EOP-012-1 as follows:

{C}a. “Capability” in the present context means real and reactive power output. That is, NERC is seeking information regarding factors that could limit output during winter storms below the values that grid operators are expecting. “Availability” refers to ability to start-up and remain online

{C}b. The word, “concerns,” in R3.5.1.2 pertains to fuel supply and inventory issues known to GO/GOPs or reasonably expected, not speculations about what might go wrong. Known inability of a NG pipeline company to support all plants on their system at maximum load during extended periods of peak demand would be reportable, for example, but GO/GOPs are not expected to evaluate fuel suppliers’ pipelines, compression/pumping equipment, contract terms or other matters over which generation entities have no control. Also, do not provide non-actionable inputs such as, “Fuel contracts contain a force majeure clause,” or, “Can’t get fuel oil deliveries if the roads are closed.”

{C}c. The term, “Environmental constraints,” in R3.5.1.4 pertains to maximum output. Narrowing of the max-to-min load environmentally compliant turndown range as the weather gets colder, as may be experienced by some combustion turbine generator units with dry low-NOx combustors, need not be reported.

{C}d. Cold-startup times for extreme winter weather conditions should be added to R3.5.1, given the use of this criterion in defining the term, "Generator Cold Weather Reliability Event"

{C}e. The need to provide evidence for the design temperature option of R3.5.2 should be limited to major freeze prevention elements, as was mentioned earlier in these comments. A unit with heat tracing and insulation designed for -25 F DBT and a 10 mph wind (-47 F WCT) may report a value of -19 F (-47 F WCT with a 20 mph wind), for example, without confirming that the lube oil heater has the same capability. This approach is especially important for peaking units that were built long ago and run primarily in the summer, not winter. They may not have the one-hour proof of R2, and design information for minor freeze prevention elements simply doesn't exist. Demanding that such equipment be reverse-engineered would be unreasonable.

{C}f. A look-back period should be specified for the historical operating temperature option of R3.5.2. We suggest the shorter of five years and the time that the unit has been in service, with going back to the most recent extreme cold weather event being preferred for units old enough to do so.

{C}g. A requirement to report data to the RC, BA and TOP should be added to R3.5. They need to use these inputs, but there's presently no requirement that they be reported to them.

{C}11. {C}R4 should be deleted. Plants must perform pre-winter preparations annually, and these activities should include updating for the past year the cold weather capability and other information communicated under R3.5 to the RC, BA and TOP. There is no benefit from endlessly repeating analyses, especially after implementing the changes recommended above.

{C}12. {C}The term, "unit-specific," in R5 should be changed to, "plant-specific." A facility with three fossil units, for example, should cover any individual-unit idiosynchrosies, but it does not need three different training courses.

{C}13. {C}The Guidance section of the standard should make it clear that annual training of maintenance and operations personnel for R5 should include on-condition activities in addition to the the NERC cold weather preparedness plan. That is, R3.4 establishes that the measures covered by EOP-012-1 are limited to those performed prior to winter in once-and-done fashion, and plants also have tasks to be performed as real-time weather conditions dictate, such as enhanced operator rounds, call-outs, and cycling mechanical-draft cooling tower fans to prevent excessive ice formation. The Guidance section of the standard should also advise that training may be split into a generic freeze prevention course and a supplemental, plant-specific module.

{C}14. {C}R6.3 does not identify the level of performance to be achieved by CAPs. It should be revised to explicitly say that it can consist of equipment modifications or adjustments to the cold weather capability declared for R3.5.2. If for example a plant with heat tracing and insulation designed for -20 F with a 20 mph wind incurs a freeze-related forced outage it can revise the R3.5.2 value or, as a market decision, add-to or modify equipment. {C}15. {C}Regarding our earlier comments on historical worst-case temperature vs the present basis of the Extreme Cold Weather Temperature definition, R6 presently says that forced outages, derates and failures to start must be corrected if occurring during 0.2 percentile-and-up conditions, but for the coldest 43 hours per decade freeze-up instances and the blackouts, deaths and damage they cause, are acceptable – no corrective action is needed. How can this be called a "reliability" standard? {C}16. {C}Having R6 require CAPs and R7 provide a no-limits offramp ("technical, commercial, or operational constraints") is strange and ineffective. PRC-004 has been cited as establishing a precedent in this respect, but this is not the case. R5 of PRC-004-6 says that entities must establish a CAP or state a valid technical (not commercial) justification for not doing so ("beyond the entity's control or would not improve BES reliability"), then R6 says that CAPs developed in R5 must be implemented. R7.1 should be amended to simply require implementation of the CAP, given the R6.3 changes requested above (modification of R3.5.2 capability declarations is sufficient). Justifications are not then required. The present R6-R7 combination seems to says that GO/GOPs must identify solutions to freeze-up problems, then they have the option of doing nothing, but if they choose this alternative it remains an open compliance issue forever.

Likes 0	
Dislikes 0	

Response

The Standard Drafting Team is appreciative of the comments provided.
For comment 4, the grammatical edit for Measure 1 has been made.
For comments 2, 10d, 10g, and 13, the Standard Drafting Team may take these into consideration during phase two of this standards development timeframe. Specifically, in addressing Key Recommendation 1a and 1b in identifying cold-weather critical components and their freeze protection measures as well as in addressing Key Recommendation 1g in providing greater specificity about the relative roles of GOs, GOPs and BAs.
For all other comments, the Standard Drafting Team will not be making the recommended changes.

Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
The cold weather exclusion should be removed from the Applicability section and instead a requirement should be added to require the GO to prove operability in cold weather through analysis/studies. This is a common practice among standards that apply to a subset of BES Elements or Facilities. Tri-State suggests that the SDT look at similar standards/requirements such as TPL-007-4, R5, PRC-023-4 R6, and PRC-002-2 R1. The Applicability section is not auditable and leaving the exception within that section could allow for entities to incorrectly exclude their units with no repercussions. This in turn could cause a reduction in grid reliability as Generator Owners continue to be unprepared for cold weather events.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. Please see the comment responses to Question 3 around applicability.	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	
Document Name	
Comment	
Talen Energy Marketing supports Talen Generation's additional comments.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment, please see response to Talen Generation.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	
Comment	

Southern Company would suggest the SDT include additional language in R1 to strengthen expectations that a generator that is committed or contractually obligated to serve a BA load per Appicablility section 4.2.1 will design and plan to operate under the conditions described in R1. The "Or" clause in R1, currently in this version, leaves too much latitude for generators not to perform prior to actually experiencing a Generator Cold Weather Reliability Event.

Southern Company suggests the following language to be added to R1:

- "If the generating unit(s) are contractually obligated to operate in the aforementioned conditions, and any technical, commercial, or operational constraint is identified by the Generator Owner, the Generator Owner shall notify their applicable Generator Operator, Transmission Operator, Balancing Authority and Reliability Coordinator in a timely manner. The Generator Owner shall specify the anticipated time required for mitigation and identify an approximate return to service date."

Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. Please see the comment responses to Question 3 around applicability.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	

Answer	
Document Name	
Comment	
No additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	
Document Name	
Comment	
FE requests clarification on the following two points : 1. Is bidding in a Unit as 'must run' for freeze protection of itself or neighboring Units (whether for radiant heat to a building, aux steam for heat or startup, or circulation of at-risk systems/fluids) an acceptable freeze protection measure? If entering a Unit 'must run' for freeze protection cannot be relied upon as an available measure, then the implementation/compliance most likely cannot be achieved in many cases in a 'cost effective manner' 2. If all Units at a specific location/plant were in reserve and none permitted to start ahead of extreme cold weather conditions, would a failure to start in extreme conditions be considered a qualifying event?	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. The Standard Drafting Team is appreciative of the comments provided. The team may consider these comments during phase two of this standards development timeframe. Specifically, in addressing Key Recommendation 1a and 1b to identify cold-weather critical components and their freeze protection measures.	
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; John Nierenberg, 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, Group Name Tacoma Power	
Answer	
Document Name	
Comment	
For EOP-012-1 R6, Tacoma Power recommends deleting the “or by July 1, whichever is earlier” language. If a cold weather event occurred in late Spring or early Summer (i.e. April through June), an entity would have less than 150 days to holistically review the event and develop a CAP.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We believe the proposed timeline is adequate and will not be making changes at this time.	
Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1	
Answer	
Document Name	
Comment	

NextEra Energy supports a weatherization framework that provides flexibility for generators to adopt new effective, commercially viable and proven technologies, but cautions against requiring the adoption of unproven technology that could damage equipment or otherwise reduce the operating life and void warranties, thereby reducing overall reliability.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. The team may consider these comments during phase two of this standards development timeframe. Specifically, in addressing Key Recommendation 1a and 1b to identify cold-weather critical components and their freeze protection measures.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	

None at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	
Document Name	
Comment	
We request the SDT confirm in a Consideration of Comments that only one of the three bullets under 3.5.2 is required for a given generating unit. We recommend the SDT consider whether the proposed interaction between R2/R4/R6 and R7 will cause GOs needing to take the declaration in 7.1 an R2/R4/R6 noncompliance based on the Glossary of Terms definition of Corrective Action Plan. R7.1 allows an entity with an appropriate justification to declare that a CAP will not be implemented, but developing a CAP requires both developing a list of actions AND extablishing an associated timetable for implementation. As a timetable for implementation is not reasonable to require for corrective actions a GO is constrained from implementing, we recommend replacing “CAP” with “list of corrective actions” in R2/R4/R6 and changing R7 part 7.1 to “Create and Implement one or more Corrective Action Plans addressing each corrective action identified pursuant to Requirements R2, R4, or R6, or explain in a declaration why one or more identified corrective actions will not be implemented due to technical, commercial, or operational constraints as defined by the Generator Owner.”	
Likes 0	
Dislikes 0	
Response	

The Standard Drafting Team is appreciative of the comments provided. The team believes that the "or" in the bulleted list in 3.5.2 shows that only one of the three bullets is required for generating unit minimum. The team modeled the language after PRC-004 and will be keeping it as approved in second ballot.	
Brian Evans-Mongeon - Utility Services, Inc. - 4	
Answer	
Document Name	
Comment	

We understand R1 and R2 as requiring GOs to implement freeze control measures that they reasonably believe, based on good engineering judgment and their experience with their particular units and weather patterns, will result in the unit being able to operate continuously for the applicable time at the Extreme Cold Weather Temperature. Our understanding of the proposed requirements is that if a new or existing unit experiences a Forced Outage as a result of a Generator Cold Weather Reliability Event, even if the Forced Outage occurs after less than twelve hours (for a new generator) or one hour (for an existing generator) of continuous operations, the Forced Outage will not constitute evidence of noncompliance with R1 or R2. Instead, the GO will develop and implement a CAP pursuant to R6 and R7, as it would in response to any Generator Cold Weather Reliability Event. The contrary interpretation—that R1 and R2 require freeze protection measures that are 100% guaranteed to work—would require a level of certainty that simply does not exist. Generators are complex machines; they sometimes fail in unforeseen ways. This problem is only compounded by the fact that, as noted by multiple panelists at the April 27-28, 2022 FERC, NERC, and Regional Entities Technical Conference on Improving Winter-Readiness of Generating Units, a cold weather event cannot be simulated ahead of time to allow functional testing of a unit's set of winterization measures. Finding a GO noncompliant with R1 or R2 based on the failure in a particular instance of winterization measures it reasonably believed, based on the information available to it prior to the cold weather event, would be adequate, would not enhance reliability.

We read R2 as providing that, where an existing unit is *not* capable of operating continuously for one hour at the Extreme Cold Weather Temperature, the method by which the GO "ensure[s] its generating unit(s) add new or modify existing freeze protection measures as needed" is the development of a CAP pursuant to R2. In other words, a GO demonstrates compliance with R2 by demonstrating either that it has implemented appropriate freeze protection measures, or that it has developed a CAP[A1] .

Suggested edit to Requirement R2 (making the 2 sentences in the Requirement 'or' statements): **R2.** For each generating unit(s) in commercial operation prior to [Effective Date of this requirement], the Generator Owner shall ensure its generating unit(s): · Add new or modify existing freeze protection measures as needed to provide the capability to operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature; or · If generating unit(s) are not capable of operating for one (1) hour at its Extreme Cold Weather Temperature, shall develop a Corrective Action Plan (CAP) for the identified issues, including identification of any needed modifications to the cold weather preparedness plan required under Requirement R3. Suggested edit to Measure M2 (add the clause "ability to operate for 1 hour at"): **M2.** Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its unit(s) in accordance with R2, or it has developed a CAP for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating units ability to operate for 1 hour at the minimum temperature per Part 3.5.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, cold weather preparedness plan, and CAP(s).

Likes 1	Illinois Municipal Electric Agency, 4, Todd Mary Ann
Dislikes 0	

Response
The Standard Drafting Team is appreciative of the comments provided. We discussed the proposed change to R2 but found it did confuse the intent of the requirement so the team decided to maintain the language that was approved by industry. We did not make the change in the measure to stay consistent with the measure language in R1.

Michael Watt - Oklahoma Municipal Power Authority - 4	
Answer	
Document Name	

Comment
OMPA agrees with the TAPs comments below: We understand R1 and R2 as requiring GOs to implement freeze control measures that they reasonably believe, based on good engineering judgment and their experience with their particular units and weather patterns, will result in the unit being able to operate continuously for the applicable time at the Extreme Cold Weather Temperature. Our understanding of the proposed requirements is that if a new or existing unit experiences a Forced Outage as a result of a Generator Cold Weather Reliability Event, even if the Forced Outage occurs after less than twelve hours (for a new generator) or one hour (for an existing generator) of continuous operations, the Forced Outage will not constitute evidence of noncompliance with R1 or R2. Instead, the GO will develop and implement a CAP pursuant to R6 and R7, as it would in response to any Generator Cold Weather Reliability Event. The contrary interpretation—that R1 and R2 require freeze protection measures that are 100% guaranteed to work—would require a level of certainty that simply does not exist. Generators are complex machines; they sometimes fail in unforeseen ways. This problem is only compounded by the fact that, as noted by multiple panelists at the April 27-28, 2022 FERC, NERC, and Regional Entities Technical Conference on Improving Winter-Readiness of Generating Units, a cold weather event cannot be simulated ahead of time to allow functional testing of a unit's set of winterization measures. Finding a GO noncompliant with R1 or R2 based on the failure in a particular instance of winterization measures it reasonably believed, based on the information available to it prior to the cold weather event, would be adequate, would not enhance reliability. We read R2 as providing that, where an existing unit is *not* capable of operating continuously for one hour at the Extreme Cold Weather Temperature, the method by which the GO "ensure[s] its generating unit(s) add new or modify existing freeze protection measures as needed" is the development of a CAP pursuant to R2. In other words, a GO demonstrates compliance with R2 by demonstrating either that it has implemented appropriate freeze protection measures, or that it has developed a CAP. The SDT has indicated that it plans to revisit the language of EOP-012-1 as part of Phase 2 of this project. Although we believe that our readings of the requirements, as outlined above, are consistent with the SDT's intent, we strongly recommend that Phase 2 clarify the language of R1 and R2 on these issues. Expressing the SDT's intent more clearly would reduce the risk of confusion and conflicting interpretations.

Likes 1	Illinois Municipal Electric Agency, 4, Todd Mary Ann

Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We discussed these comments and changes will not be made at this time.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	
Document Name	
Comment	
Avista recommends some reconsideration as to the applicability of the EOP 12-2 as it relates to ALL BES generating facilities. Both the letter and intent of the draft standard appear to be related specifically to thermal or steam process plants that use a Rankin cycle to generate electricity, and their susceptibility for freezing during cold weather. Can the permit team under Part 2 reconsider the applicability of facilities to consider to just those facilities related to the Rankin cycle that use steam as a means of generating electricity. Many facilities such as hydroelectric facilities internal combustion generation, wind turbine generators, and are much less susceptible to extreme cold weather and should not be treated the same regarding compliance requirements of such a standard.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. Please see the comment responses to Question 3 around applicability.	
Brooke Jockin - Portland General Electric Co. - 1, Group Name Portland General Electric Co.	
Answer	
Document Name	
Comment	

Portland General Electric Company supports the survey response provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Devon Tremont - Taunton Municipal Lighting Plant - 1	
Answer	
Document Name	
Comment	

We understand R1 and R2 as requiring GOs to implement freeze control measures that they reasonably believe, based on good engineering judgment and their experience with their particular units and weather patterns, will result in the unit being able to operate continuously for the applicable time at the Extreme Cold Weather Temperature. Our understanding of the proposed requirements is that if a new or existing unit experiences a Forced Outage as a result of a Generator Cold Weather Reliability Event, even if the Forced Outage occurs after less than twelve hours (for a new generator) or one hour (for an existing generator) of continuous operations, the Forced Outage will not constitute evidence of noncompliance with R1 or R2. Instead, the GO will develop and implement a CAP pursuant to R6 and R7, as it would in response to any Generator Cold Weather Reliability Event. The contrary interpretation—that R1 and R2 require freeze protection measures that are 100% guaranteed to work—would require a level of certainty that simply does not exist. Generators are complex machines; they sometimes fail in unforeseen ways. This problem is only compounded by the fact that, as noted by multiple panelists at the April 27-28, 2022 FERC, NERC, and Regional Entities Technical Conference on Improving Winter-Readiness of Generating Units, a cold weather event cannot be simulated ahead of time to allow functional testing of a unit's set of winterization measures. Finding a GO noncompliant with R1 or R2 based on the failure in a particular instance of winterization measures it reasonably believed, based on the information available to it prior to the cold weather event, would be adequate, would not enhance reliability.

We read R2 as providing that, where an existing unit is *not* capable of operating continuously for one hour at the Extreme Cold Weather Temperature, the method by which the GO "ensure[s] its generating unit(s) add new or modify existing freeze protection measures as

needed" is the development of a CAP pursuant to R2. In other words, a GO demonstrates compliance with R2 by demonstrating either that it has implemented appropriate freeze protection measures, or that it has developed a CAP. The SDT has indicated that it plans to revisit the language of EOP-012-1 as part of Phase 2 of this project. Although we believe that our readings of the requirements, as outlined above, are consistent with the SDT's intent, we strongly recommend that Phase 2 clarify the language of R1 and R2 on these issues. Expressing the SDT's intent more clearly would reduce the risk of confusion and conflicting interpretations.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We discussed these comments and changes will not be made at this time.	
Scott Kinney - Avista - Avista Corporation - 3	
Answer	
Document Name	
Comment	
Avista recommends some reconsideration as to the applicability of the EOP 12-2 as it relates to ALL BES generating facilities. Both the letter and intent of the draft standard appear to be related specifically to thermal or steam process plants that use a Rankin cycle to generate electricity, and their susceptibility for freezing during cold weather. Can the permit team under Part 2 reconsider the applicability of facilities to consider to just those facilities related to the Rankin cycle that use steam as a means of generating electricity. Many facilities such as hydroelectric facilities internal combustion generation, wind turbine generators, and are much less susceptible to extreme cold weather and should not be treated the same regarding compliance requirements of such a standard.	
Likes 0	
Dislikes 0	

Response
The Standard Drafting Team is appreciative of the comments provided. Please see the comment responses to Question 3 around applicability.

Mark Spencer - LS Power Development, LLC - 5	
Answer	
Document Name	
Comment	

The SDT states that “cost recovery” is outside the scope of its work, yet wades into economic regulation by i) applying different standards to new and existing generators and ii) offering a “commercial constraint” exemption. In the former instance, the only justification the SDT offered is that a more stringent standard could create premature retirements. This is despite the plain language requirement of the statute that all prudent and necessary costs to comply with the reliability standards shall be recoverable. If generator owners are held harmless from the cost of compliance, then why would a rigorous standard drive retirements? In the latter case, the commercial constraint would violate NERC Market Principles. As an illustrative example, if two generators, A and B, were participating in the same market, owner of Generator A declared its intention to retire “soon” and declared a “commercial constraint” exemption from compliance. Generator A is not saddled with the compliance costs because of its “constraint,” while Generator B has compliance costs; yet both generators compete in the same market in the same interval. We cannot think of a clearer example of a reliability standard creating an unfair competitive advantage.

Additionally, the SDT’s attempt at economic regulation is producing a diluted reliability standard that could actually reduce reliability. Our analysis demonstrates that all locations that experience freezing temperatures experienced multiple events that lasted more than one hour at or below their respective ECWT. As we describe above, we are concerned that fleet performance will regress towards the new 1-hour standard, even for existing generators that may have had historically good performance. This would reduce reliability. Additionally, setting a 12-hour duration for new resources would take decades to have any meaningful reliability impact as new generators replace existing. For these reasons, we urge the SDT to set a common standard for existing and new that will meaningfully enhance reliability.

We also urge the SDT to eliminate the "commercial constraint" exemption. We are not aware of a similar provision in any other approved NERC reliability standard, and this provision may create unwanted debate regarding other reliability standards. First, it leaves it to the generator owner's discretion to determine whether it is exempt from compliance, which favors states and merchant generators to rely on the most liberal interpretation of the exemption that achieves the lowest cost. This is extremely bad precedent. Second, the vaguely defined exemption will create inevitable disagreements between generator owners and auditors that may only be raised at the time of the audit. Third, it raises the question that if a retirement decision is a valid exemption then why should a generator that is "due to retire soon" be required to comply with *any* NERC reliability standard? This is bad precedent. Finally, a generator owner could make an argument that if its tariff does not allow cost recovery that too is a commercial constraint and merits an exemption. Unlike the regulated markets, this is particularly worrisome for the organized markets where cost recovery is not guaranteed before an investment is made.

We are also concerned NERC may not have the authority under the Federal Power Act to impose the proposed standard. NERC cites the definition of "reliability standard" as its authority to impose requirements on existing generators. The definition from the statute is replicated below:

"*The term 'reliability standard' means a requirement, approved by the Commission under this section, to provide for reliable operation of the bulk-power system. The term includes requirements for the operation of existing bulk-power system facilities, including cybersecurity protection, and the design of planned additions or modifications to such facilities to the extent necessary to provide for reliable operation of the bulk-power system, but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.*"

However, the statute also defines the term "reliable operations":

"The term 'reliable operation' means operating the elements of the bulk-power system within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure of system elements."

The term 'reliable operations' is expressly limited to items that cause "sudden disturbances, including a cybersecurity incident" or an "unanticipated failure of system elements." "[U]nanticipated failure" is not a failure of a generator at a temperature below its cold weather rating. Thus, it appears that mandating expanded performance obligations directly on existing generators through a reliability standard is outside the scope of this definition. Additionally, we are not aware of any approved reliability standard mandating generators install components for an expanded range of services.

For these reasons, we encourage NERC to reconsider its approach. We offer an alternative approach that would require the BAs to procure this expanded service and harmonize it with attributes in addition to freeze protection – e.g., fuel, environmental limitations, etc. Relying on BAs to procure their reliability needs is a more defensible and economically efficient approach to enhancing reliability. It is also an approach that eliminates the need for a "commercial constraint" exemption and permits for a more robust reliability standard. However, if NERC does not consider this alternate, we recommend that the Commission hold the compliance date in abeyance until cost recovery has been properly addressed. As background, in the ISO New England CIP IROL proceeding certain generators were designated IROL facilities, were promised that they would have an opportunity to recover their costs, and incurred substantial compliance costs. Unfortunately, the ISO's filing was after many generators incurred the costs and thus the Commission found that recovery of costs prior to the filing would violate the filed rate doctrine, and rejected recovery of those pre-filing costs.

Likes 1	Vistra Energy, 5, Roethemeyer Dan
Dislikes 0	

Response

The Standard Drafting Team is appreciative of the comments provided. Please see previous comment responses around cost recovery from the previous Ballot.

David Jendras - Ameren - Ameren Services - 3

Answer	
Document Name	
Comment	
Ameren agrees with the EEI and the NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI and NAGF.	
Joe Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	
Document Name	
Comment	
Xcel Energy supports comments from EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3, Group Name OGE Energy	
Answer	
Document Name	
Comment	

OG&E supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	
Document Name	
Comment	
PG&E thanks the SDT's for their effort to address the industry's concerns regarding the proposed Standard, the effort it has taken to complete the work up to this point, and the work necessary to complete the modifications in Phase Two of the project. PG&E also supports the additional input provided by EEI related to Requirement R2, and the NAGF concerns related to retrofitting and compensation on those retrofits. This includes the NAGF input that the Requirements in EOP-011 which is enforceable on 4/1/2023 should be allowed to take effect and determine if they are sufficient to address cold weather operations. PG&E also supports the NAGF proposed language if NERC wishes to add in the reliability requirements language.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. Please see response to EEI.	

Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	
Document Name	
Comment	
As stated above, Dominion Energy remains concerned with the requirement to retrofit or otherwise improve an existing generator's cold weather performance capability and proposes the drafting team consider the more cost-effective option of requiring generators to communicate their extreme cold weather operating capabilities to the BA and RC. Communicating operating capabilities and failing to meet them during an event would result in the CAP as outlined in R6. This option allows the BA and RC to appropriately plan for extreme cold weather events without placing a potentially unnecessary burden to retrofit existing generators and require them to perform beyond established designed operating parameters. Dominion Energy is of the opinion that ensuring operating parameters for extreme cold weather are communicated and understood by the appropriate entities is more beneficial to reliability during these events than a blanket retrofit requirement.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. The team may consider these comments during phase two of this standards development timeframe. Specifically, in addressing Key Recommendation 1g in providing greater specificity about the relative roles of GOs, GOPs and BAs.	
Thomas Foltz - AEP - 5	
Answer	
Document Name	
Comment	

AEP recognizes the importance of this project, and the priority which it has been given. Having said that, AEP hopes that industry's outstanding concerns (those not currently met in the current draft) will be fully addressed in a Phase II of this project. In addition, we recommend that industry be allowed the customary time period to develop comments and cast ballots at that time.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. The Standard Drafting Team is committed to addressing Key Recommendations set to be addressed in Phase 2 of this standards development timeframe. The balloting timeframe will be in accordance with the customary standards drafting process timeline.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 3,5,6 - SERC, Group Name Louisville Gas and Electric Company and Kentucky Utilities Company	
Answer	
Document Name	
Comment	
LouisvilleG&E/KU support EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Lenise Kimes - City and County of San Francisco - 1,5 - WECC	
Answer	
Document Name	

Comment	
No additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
One of the most important aspects of this Phase 1 EOP-12 and existing EOP-11-2 is the communication of limiting temperatures to the BA/TOP via IRO-010 and TOP-003. Although how the BA/TOP will use the temperature information is outside the scope of these efforts, BA/TOP knowledge of limiting operating temperature and Extreme Cold Weather Temperature (ECWT), and the expected dialogue between GO/GOPs and BA/TOPs, is expected to result in more robust, realistic cold weather resource planning. ..... Two editorial comments on the Technical Rationale doc: 1) The last two bullet points supporting R6 in the Technical Rationale document should be reworded, perhaps with examples. That is, the current bullet point language that the use of the ECWT instead of minimum operating temperature removes incentives and disincentives is confusing, and the two appear to be addressing the same issue, just coming from different perspectives. 2) Also in the same section is the capitalization of Generator Unit Minimum Temperature. Recommend a check be made to ensure this is an official definition. Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	

Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We discussed these comments and changes will not be made at this time.	
Alison Mackellar - Constellation - 5	
Answer	
Document Name	
Comment	
One of the most important aspects of this Phase 1 EOP-12 and existing EOP-11-2 is the communication of limiting temperatures to the BA/TOP via IRO-010 and TOP-003. Although how the BA/TOP will use the temperature information is outside the scope of these efforts, BA/TOP knowledge of limiting operating temperature and Extreme Cold Weather Temperature (ECWT), and the expected dialogue between GO/GOPs and BA/TOPs, is expected to result in more robust, realistic cold weather resource planning. ..... Two editorial comments on the Technical Rationale doc: 1) The last two bullet points supporting R6 in the Technical Rationale document should be reworded, perhaps with examples. That is, the current bullet point language that the use of the ECWT instead of minimum operating temperature removes incentives and disincentives is confusing, and the two appear to be addressing the same issue, just coming from different perspectives. 2) Also in the same section is the capitalization of Generator Unit Minimum Temperature. Recommend a check be made to ensure this is an official definition Kimberly Turco, on behalf of Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We discussed these comments and changes will not be made at this time.	

Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	
Document Name	
Comment	

Reclamation is providing the language it proposed for EOP-012 in Draft 1 here for convenience:

Reclamation recommends rewriting the requirements of EOP-012-1 as follows:

R1. *use existing language from Draft 1 EOP-012-1 R1.1* with the following corrections:

Each Generator Owner shall design new and maintain existing generating units to be capable of continuous operations at the documented minimum hourly temperature experienced at each unit's location since 1/1/1975 or a lesser period if reliable data is not available to 1975.

R2. *use existing language from Draft 1 EOP-012-1 R1* with the following corrections:

Each Generator Owner shall implement new or modify existing protection based on the documented minimum hourly temperature for its generating units including the following minimum criteria:

R2.1. the cooling effect of wind; and

R2.2. impacts on equipment operation due to precipitation (e.g., sleet, snow, ice, and freezing rain).

R3. *use existing language from Draft 1 EOP-012-1 R1.4* with the following corrections:

For each existing generating unit that requires new or modified protection based on the documented minimum hourly temperature, the Generator Owner shall develop and implement a Corrective Action Plan (CAP) or, where deemed appropriate by the Generator Owner based on the review of parts R3.1.1 through R3.1.3., declare that no corrective actions will be taken.

R3.1. A CAP shall contain the following minimum information:

R3.1.1. Corrective action(s) for the affected unit(s).

R3.1.2. Any temporary operating limitations that would apply until the corrective actions are implemented.

R3.1.3. A schedule for implementing the corrective action(s).

R3.2. A declaration shall document any technical, commercial, or operational constraints of each affected unit, as defined by the Generator Owner, in support of the declaration.

R4. *use existing language from Draft 1 EOP-012-1 R2* with the following corrections:

Each Generator Owner that does not implement new or modify existing protection based on the documented minimum hourly temperature in accordance with R2 due to technical, commercial, or operational constraints, as defined by the Generator Owner, shall:

R4.1. Document its determination and the constraints; and

R4.2. Review its determination every five calendar years to determine whether the constraints remain applicable.

R5. *use existing language from Draft 1 EOP-012-1 R3*

R6. *use existing language from Draft 1 EOP-012-1 R4, update Part numbers as necessary*

R7. *use existing language from Draft 1 EOP-012-1 R5* with the following corrections:

Each Generator Owner, in conjunction with its Generator Operator, shall ensure generating unit-specific cold weather preparedness plan training is provided to its personnel responsible for implementing cold weather preparedness plans.

R7.1. The Generator Owner and Generator Operator shall identify the entity responsible for providing the training.

R7.2. The Generator Owner and Generator Operator shall ensure the training is provided to personnel responsible for implementing cold weather preparedness plans upon entrance on duty and annually thereafter.

R8. *use existing language from Draft 1 EOP-012-1 R6* with the following corrections:

Each Generator Owner that owns a generating unit that experiences an event resulting in a derate of more than 10% of the total capacity of the unit for longer than four hours in duration, a start-up failure where the unit fails to synchronize within a specified start-up time, or a Forced Outage for which (i) the apparent cause(s) of the event is due to extreme cold weather effects within the Generator Owner's control

to protect against, and (ii) the ambient conditions at the site at the time of the event are at or above the temperature documented in Part 3.4.2 shall:

R8.1. No later than 150 days subsequent to the event or by July 1 that follows the event, whichever is ***later***, develop a CAP; or

R8.2. Declare, where deemed appropriate by the Generator Owner based on review of Parts 8.3.1. through 8.3.5, that no revisions to the cold weather preparedness plan are required and that no further corrective actions will be taken.

R8.3. At a minimum, a CAP shall contain:

R8.3.1. A summary of the identified cause(s) ***of*** the equipment ***derate, failure to start, or Forced Outage***, and any relevant associated data.

8.3.2 use existing 6.2.1. language

8.3.3. use existing 6.2.2. language

8.3.4. (modified 6.2.3.) Specific corrective action(s) for the affected unit(s) and identified similar units, including:

8.3.4.1. (modified 6.2.3.) any necessary modifications to the Generator Owner's cold weather preparedness plan(s); and

8.3.4.2. (modified 6.2.4.) consideration of any technical, commercial, or operational constraints, as defined by the Generator Owner.

8.3.5. A ***schedule*** for implementing the corrective actions.

R8.4. At a minimum, a declaration shall document technical, commercial, or operational constraints, as defined by the Generator Owner, as support for the declaration.

Reclamation recommends the timeframe for developing a CAP be 150 days subsequent to the event or by July 1 that follows the event, whichever is ***later***. Using whichever is earlier could subject an entity to an unreasonably short deadline depending on when the event occurs.

Reclamation recommends moving the language pertaining to the cold weather preparedness plans from the original R1 to the original R3 (new R5 based on Reclamation's proposed renumbering in the above comments). Modifications to the cold weather preparedness plan should relate back to the CAP, if necessary, not the CAP requirements relating forward to the cold weather preparedness plan.

Reclamation recommends not limiting the training on cold weather preparedness plans to “maintenance or operations” personnel, as other personnel may also be responsible for implementing cold weather preparedness plans and should not be excluded from the training. Reclamation recommends the annual cold weather preparedness plan training be contained in PER-006 instead of EOP-012. Reclamation supports the retention and reuse of pertinent information from the Draft 1 Measures.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We discussed these comments and changes will not be made at this time.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	
Document Name	
Comment	
NRG agrees with the NAGF that communicating operating parameters for extreme cold weather that are understood by the appropriate entities is more appropriate and beneficial to reliability during these events rather than a blanket retrofit requirement to operate to a defined condition. *We realize NERC cannot address the compensation issue for required improvements, but unless there is agreement from and with parties that can provide compensation for upgrades, this standard becomes an unfunded mandate on Generator Owners.*	
Likes 0	
Dislikes 0	
Response	

The Standard Drafting Team is appreciative of the comments provided. Please see previous comments responses on cost recovery in the previous Ballot.	
Romel Aquino - Edison International - Southern California Edison Company - 3	
Answer	
Document Name	
Comment	
Please see comments submitted by the Edison Electric Institute	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	
Document Name	
Comment	
NRG agrees with the NAGF that communicating operating parameters for extreme cold weather that are understood by the appropriate entities is more appropriate and beneficial to reliability during these events than a blanket retrofit requirement to operate to a defined condition. *We realize NERC cannot address the compensation issue for required improvements, but unless there is agreement from and with parties that can provide compensation for upgrades, this standard becomes an unfunded mandate on Generator Owners.*	

Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. Please see previous comments responses on cost recovery in the previous Ballot.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	
Document Name	
Comment	
"Please see comments submitted by the Edison Electric Institute"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	
Document Name	
Comment	
PNM supports EEI's comments regarding modification of Requirement R2 to link with Requirement R7.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment, please see response to EEI.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	
Document Name	
Comment	

The IESO reiterates its comment for Draft 1, where it requested that removal of the 'commercial' reference in Requirements 1 and 7.1 as this language is vague, creates an ambiguity as to the obligation otherwise provided for in the standard, and a review of commercial issues is not within NERC's domain and expertise.

In the Reliability Standard CIP-014 – Physical Security, NERC recognized that it does not have the physical security expertise to appropriately evaluate the risk assessment performed by the Transmission Owner. As such, CIP-014 requires an unaffiliated third party with the appropriate expertise to verify it.

Given that NERC's purview is reliability of the bulk power system, and not commercial matters, the SRC proposes that NERC adopt a similar approach for the proposed standard. Should a Generator Owner opt out of a Corrective Action Plan for commercial constraints, an unaffiliated third party should verify the finanacial assessment performed by the Generator Owner. The third party should have financial analysis experience, such as an auditing/accounting firm.

We also suggest that NERC develop clear boundaries regarding the use of commercial constraints to opt out of a CAP, such as:

- the investment in freezing protection measures is cost prohibitive due to new technology not yet advanced (i.e., economies of scale to yet reached) or
- the investment is below the registered entity's rate of return.

We recognize that cost recovery for generators is also not within the purview of NERC. Cost recovery for generators usually falls within state/provincial purview, and through market mechanisms. The SRC proposes that NERC consider adding a stakeholder process in the proposed requirement, similar to that in Reliability Standard TPL-001 – Transmission Planning on use of planned consequential load loss. An

open stakeholder process that ensures state/provincial agencies are aware of the need for freeze protection measures to meet the reliability requirements in the proposed standard will allow affected parties to assess the cost recovery issues.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. Commercial constraints have been discussed by the Standard Drafting team and changes will not be made at this time.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster	
Answer	
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #9.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to EEI.	
Dan Roethemeyer - Vistra Energy - 5	
Answer	
Document Name	
Comment	

Vistra has additional recommendations/requested clarifications on the proposed requirements described below:

The NERC Calculating Extreme Cold Weather Temperature guide should be modified to address circumstances where National Oceanic and Atmospheric Administration (NOAA) data dating back to January 1, 2000 does not exist for the particular location. For example, NOAA has weather data for Andrews, Texas dating back only to 2014, and there are no other representative NOAA locations in the dataset. There may be other instances of rural airports or other NOAA weather data locations that do not have data going back to 2000. The Guide should specify an alternate source(s) of acceptable weather data for calculation of the Extreme Cold Weather Temperature in instances where NOAA data does not exist back to 2000, as well as how to select the location for the substitute temperature data, how to input that substitute data into the NOAA dataset, and how to treat missing temperature data (blanks) when the NOAA report is run.

Proposed R3.1 requires that a Generator Owner include in its cold weather preparedness plan the "Extreme Cold Weather Temperature for their unit(s) including the calculation date and source of temperature data." If the Technical Requirements document titled "Calculating Extreme Cold Weather Temperature" is intended to provide the source of temperature data for all Generator Owners, then this language should be modified to state "Extreme Cold Weather Temperature for their unit(s) including the calculation date using NERC's guide for Calculating Extreme Cold Weather Temperature." Otherwise, the standard should be modified to clarify what sources of data are permissible, including data provided by the balancing authority (as noted in response to Question 2).

Proposed R3.5.1.2 requires Generator Owners to include within their cold weather preparedness plans "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns." This language should be revised to clarify that the Generator Owner is only responsible for fuel supply and inventory within its control and knowledge, as Generator Owners do not always own the source or transportation for their fuel supply and thus cannot always identify or anticipate fuel supply and inventory concerns. For example, the requirement could be modified to read: "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns, to the extent known to the Generator Owner."

Proposed R4 should clarify that a redesign of the unit(s) will not be required every five years. The standard requires that a Generator Owner calculate a new Extreme Cold Weather Temperature and update its cold weather preparedness plan and freeze protection measures as needed, or else, develop a Corrective Action Plan (CAP). As drafted, the standard could be interpreted as potentially requiring a redesign or retrofitting of a unit every 5 years. Vistra recommends that, in conjunction with adding a definition of "freeze protection measures" that includes procedures and temporary equipment among those measures (as recommended under Question 5), R4.3 could be modified to add the following sentence at the end: "If a CAP is required under this Requirement R4, the CAP cannot require a Generator Owner to redesign or retrofit its unit to meet the requirements in R1 or R2, as applicable, at the updated Extreme Cold Weather Temperature for the unit(s)." Proposed R5 should clarify that the required training will be site-specific, rather than unit-specific: "Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-site specific training, and that identified entity shall provide annual training at each site to its maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s) at that site developed pursuant to Requirement R3." Proposed R6 should require a CAP to be developed within 150 days, rather than the earlier of 150 days or July 1. If a Generator Cold Weather Reliability Event occurs at the end of the winter season (or during a freak winter-like storm in March or April), a Generator Owner could have significantly fewer than 150 days to develop a CAP if the standard is based on the earlier of July 1 or 150 days. At the same time, even if an event occurred as late as early April, the 150 day standard would still require that the CAP be developed in advance of the next winter season (e.g., 150 days, or roughly 5 months, after April would still be in September). Thus, R6 should strike the alternative reference to July 1.

Likes 0	
Dislikes 0	

Response
The Standard Drafting Team is appreciative of the comments provided. With regards to NERC Calculating Extreme Cold Weather Temperature guide, this topic is covered in the technical rationale document. With regards to unit vs site specific training, this is approved language and the team believes that training can be developed holistically with unit-specific differences highlighted where applicable.
Daniel Gacek - Exelon - 1

Answer	
Document Name	
Comment	
Exelon concurs with EEI's comment to Question 9 Submitted on behalf of Exelon, Segments 1 & 3	
Likes 0	
Dislikes 0	
Response	
Thank you for the response, please see response to EEI.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	
Document Name	
Comment	
Nothing additional to add at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response.	
Donna Johnson - Oglethorpe Power Corporation - 5	

Answer	
Document Name	
Comment	
For R5: In regards to the proposed verbiage requiring "generating unit-specific training", it is OPC's opinion that this could be overly repetitious for stations that have multiple units, which are considered sister units and hence would have the same generator protection measures in place. We recomenend modifying this requirement to require station-specitic training in lieu of generating unit-specific training. In cased where there are different freeze protection measures for unit(s), those measures would be defined within the training anyway since it covers freeze protection for all units at a station.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. With regards to unit vs site specific training, this is approved language and the team believes that training can be developed holistically with unit-specific differences highlighted where applicable and as such, changes will not be made at this time.	
Scott McGough - Georgia System Operations Corporation - 3	
Answer	
Document Name	
Comment	
For **R5:** In regards to the proposed verbiage requiring “generating unit-specific training”, it is OPC’s opinion that this could be overly repetitious for stations that have multiple units, which are considered sister units and hence would have the same generator protection measures in place. We recommend modifying this requirement to require station-specific training in lieu of generating unit-specifc training. In cases where there are different freeze protection measures for unit(s), those measures would be defined within the training anyway since it covers freeze protection for all units at a station.	

Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. With regards to unit vs site specific training, this is approved language and the team believes that training can be developed holistically with unit-specific differences highlighted where applicable and as such, changes will not be made at this time.	
LeRoy Patterson - Public Utility District No. 2 of Grant County, Washington - 6	
Answer	
Document Name	
Comment	
The industry already voted other requirements into standards, and now the SDT is expanding the requirements to a new standard which is unnecessary. These requirements are not an emergency operations standard as written. If such standards are needed, they constitute a facilities standard (as in Facilities Design, Connections, and Maintenance).	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We believe these requirements properly belong in the EOP family as it is preparing facilities for extreme weather emergencies.	
Stewart Rake - Luminant Mining Company LLC - 7	
Answer	
Document Name	
Comment	

Vistra has additional recommendations/requested clarifications on the proposed requirements described below:

The NERC Calculating Extreme Cold Weather Temperature guide should be modified to address circumstances where National Oceanic and Atmospheric Administration (NOAA) data dating back to January 1, 2000 does not exist for the particular location. For example, NOAA has weather data for Andrews, Texas dating back only to 2014, and there are no other representative NOAA locations in the dataset. There may be other instances of rural airports or other NOAA weather data locations that do not have data going back to 2000. The Guide should specify an alternate source(s) of acceptable weather data for calculation of the Extreme Cold Weather Temperature in instances where NOAA data does not exist back to 2000, as well as how to select the location for the substitute temperature data, how to input that substitute data into the NOAA dataset, and how to treat missing temperature data (blanks) when the NOAA report is run.

Proposed R3.1 requires that a Generator Owner include in its cold weather preparedness plan the "Extreme Cold Weather Temperature for their unit(s) including the calculation date and source of temperature data." If the Technical Requirements document titled "Calculating Extreme Cold Weather Temperature" is intended to provide the source of temperature data for all Generator Owners, then this language should be modified to state "Extreme Cold Weather Temperature for their unit(s) including the calculation date and source of temperature data, using NERC's guide for Calculating Extreme Cold Weather Temperature." Otherwise, the standard should be modified to clarify what sources of data are permissible, including data provided by the balancing authority (as noted in response to Question 2).

Proposed R3.5.1.2 requires Generator Owners to include within their cold weather preparedness plans "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns." This language should be revised to clarify that the Generator Owner is only responsible for fuel supply and inventory within its control and knowledge, as Generator Owners do not always own the source or transportation for their fuel supply and thus cannot always identify or anticipate fuel supply and inventory concerns. For example, the requirement could be modified to read: "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns, to the extent known to the Generator Owner."

Proposed R4 should clarify that a redesign of the unit(s) will not be required every five years. The standard requires that a Generator Owner calculate a new Extreme Cold Weather Temperature and update its cold weather preparedness plan and freeze protection measures as needed, or else, develop a Corrective Action Plan (CAP). As drafted, the standard could be interpreted as potentially requiring a redesign or

retrofitting of a unit every 5 years. Vistra recommends that, in conjunction with adding a definition of "freeze protection measures" that includes procedures and temporary equipment among those measures (as recommended under Question 5), R4.3 could be modified to add the following sentence at the end: "If a CAP is required under this Requirement R4, the CAP cannot require a Generator Owner to redesign or retrofit its unit to meet the requirements in R1 or R2, as applicable, at the updated Extreme Cold Weather Temperature for the unit(s)."

Proposed R5 should clarify that the required training will be site-specific, rather than unit-specific: "Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-site specific training, and that identified entity shall provide annual training at each site to its maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s) at that site developed pursuant to Requirement R3."

Proposed R6 should require a CAP to be developed within 150 days, rather than the earlier of 150 days or July 1. If a Generator Cold Weather Reliability Event occurs at the end of the winter season (or during a freak winter-like storm in March or April), a Generator Owner could have significantly fewer than 150 days to develop a CAP if the standard is based on the earlier of July 1 or 150 days. At the same time, even if an event occurred as late as early April, the 150 day standard would still require that the CAP be developed in advance of the next winter season (e.g., 150 days, or roughly 5 months, after April would still be in September). Thus, R6 should strike the alternative reference to July 1.

Proposed R3.1 requires that a Generator Owner include in its cold weather preparedness plan the "Extreme Cold Weather Temperature for their unit(s) including the calculation date and source of temperature data." If the Technical Requirements document titled "Calculating Extreme Cold Weather Temperature" is intended to provide the source of temperature data for all Generator Owners, then this language should be modified to state "Extreme Cold Weather Temperature for their unit(s) including the calculation date and source of temperature data, using NERC's guide for Calculating Extreme Cold Weather Temperature." Otherwise, the standard should be modified to clarify what sources of data are permissible, including data provided by the balancing authority (as noted in response to Question 2).

Proposed R3.5.1.2 requires Generator Owners to include within their cold weather preparedness plans "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns." This language should be revised to clarify that the Generator Owner is only responsible for fuel supply and inventory within its control and knowledge, as Generator Owners do not always own the source or transportation for their fuel supply and thus cannot always identify or anticipate fuel supply and inventory concerns. For example, the requirement could be modified to read: "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns, to the extent known to the Generator Owner."

Proposed R4 should clarify that a redesign of the unit(s) will not be required every five years. The standard requires that a Generator Owner calculate a new Extreme Cold Weather Temperature and update its cold weather preparedness plan and freeze protection measures as needed, or else, develop a Corrective Action Plan (CAP). As drafted, the standard could be interpreted as potentially requiring a redesign or retrofitting of a unit every 5 years. Vistra recommends that, in conjunction with adding a definition of "freeze protection measures" that includes procedures and temporary equipment among those measures (as recommended under Question 5), R4.3 could be modified to add the following sentence at the end: "If a CAP is required under this Requirement R4, the CAP cannot require a Generator Owner to redesign or retrofit its unit to meet the requirements in R1 or R2, as applicable, at the updated Extreme Cold Weather Temperature for the unit(s)."

Proposed R5 should clarify that the required training will be site-specific, rather than unit-specific: "Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-site specific training, and that identified entity shall provide annual training at each site to its maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s) at that site developed pursuant to Requirement R3."

Proposed R6 should require a CAP to be developed within 150 days, rather than the earlier of 150 days or July 1. If a Generator Cold Weather Reliability Event occurs at the end of the winter season (or during a freak winter-like storm in March or April), a Generator Owner could have significantly fewer than 150 days to develop a CAP if the standard is based on the earlier of July 1 or 150 days. At the same time, even if an event occurred as late as early April, the 150 day standard would still require that the CAP be developed in advance of the next winter season (e.g., 150 days, or roughly 5 months, after April would still be in September). Thus, R6 should strike the alternative reference to July 1.

Proposed R3.1 requires that a Generator Owner include in its cold weather preparedness plan the "Extreme Cold Weather Temperature for their unit(s) including the calculation date and source of temperature data." If the Technical Requirements document titled "Calculating Extreme Cold Weather Temperature" is intended to provide the source of temperature data for all Generator Owners, then this language should be modified to state "Extreme Cold Weather Temperature for their unit(s) including the calculation date and source of temperature data, using NERC's guide for Calculating Extreme Cold Weather Temperature." Otherwise, the standard should be modified to clarify what sources of data are permissible, including data provided by the balancing authority (as noted in response to Question 2).

Proposed R3.5.1.2 requires Generator Owners to include within their cold weather preparedness plans "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns." This language should be revised to clarify that the Generator Owner is only responsible for fuel supply and inventory within its control and knowledge, as Generator Owners do not always own the source or transportation for their fuel supply and thus cannot always identify or anticipate fuel supply and inventory concerns. For example, the requirement could be modified to read: "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns, to the extent known to the Generator Owner."

Proposed R4 should clarify that a redesign of the unit(s) will not be required every five years. The standard requires that a Generator Owner calculate a new Extreme Cold Weather Temperature and update its cold weather preparedness plan and freeze protection measures as needed, or else, develop a Corrective Action Plan (CAP). As drafted, the standard could be interpreted as potentially requiring a redesign or retrofitting of a unit every 5 years. Vistra recommends that, in conjunction with adding a definition of "freeze protection measures" that includes procedures and temporary equipment among those measures (as recommended under Question 5), R4.3 could be modified to add the following sentence at the end: "If a CAP is required under this Requirement R4, the CAP cannot require a Generator Owner to redesign or retrofit its unit to meet the requirements in R1 or R2, as applicable, at the updated Extreme Cold Weather Temperature for the unit(s)."

Proposed R5 should clarify that the required training will be site-specific, rather than unit-specific: "Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-site specific training, and that identified

entity shall provide annual training at each site to its maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s) at that site developed pursuant to Requirement R3."

Proposed R6 should require a CAP to be developed within 150 days, rather than the earlier of 150 days or July 1. If a Generator Cold Weather Reliability Event occurs at the end of the winter season (or during a freak winter-like storm in March or April), a Generator Owner could have significantly fewer than 150 days to develop a CAP if the standard is based on the earlier of July 1 or 150 days. At the same time, even if an event occurred as late as early April, the 150 day standard would still require that the CAP be developed in advance of the next winter season (e.g., 150 days, or roughly 5 months, after April would still be in September). Thus, R6 should strike the alternative reference to July 1.

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Proposed R3.5.1.2 requires Generator Owners to include within their cold weather preparedness plans "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns." This language should be revised to clarify that the Generator Owner is only responsible for fuel supply and inventory within its control and knowledge, as Generator Owners do not always own the source or transportation for their fuel supply and thus cannot always identify or anticipate fuel supply and inventory concerns. For example, the requirement could be modified to read: "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns, to the extent known to the Generator Owner."

Proposed R4 should clarify that a redesign of the unit(s) will not be required every five years. The standard requires that a Generator Owner calculate a new Extreme Cold Weather Temperature and update its cold weather preparedness plan and freeze protection measures as needed, or else, develop a Corrective Action Plan (CAP). As drafted, the standard could be interpreted as potentially requiring a redesign or

retrofitting of a unit every 5 years. Vistra recommends that, in conjunction with adding a definition of "freeze protection measures" that includes procedures and temporary equipment among those measures (as recommended under Question 5), R4.3 could be modified to add the following sentence at the end: "If a CAP is required under this Requirement R4, the CAP cannot require a Generator Owner to redesign or retrofit its unit to meet the requirements in R1 or R2, as applicable, at the updated Extreme Cold Weather Temperature for the unit(s)."

Proposed R5 should clarify that the required training will be site-specific, rather than unit-specific: "Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-site specific training, and that identified entity shall provide annual training at each site to its maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s) at that site developed pursuant to Requirement R3."

Proposed R6 should require a CAP to be developed within 150 days, rather than the earlier of 150 days or July 1. If a Generator Cold Weather Reliability Event occurs at the end of the winter season (or during a freak winter-like storm in March or April), a Generator Owner could have significantly fewer than 150 days to develop a CAP if the standard is based on the earlier of July 1 or 150 days. At the same time, even if an event occurred as late as early April, the 150 day standard would still require that the CAP be developed in advance of the next winter season (e.g., 150 days, or roughly 5 months, after April would still be in September). Thus, R6 should strike the alternative reference to July 1.

Proposed R3.1 requires that a Generator Owner include in its cold weather preparedness plan the "Extreme Cold Weather Temperature for their unit(s) including the calculation date and source of temperature data." If the Technical Requirements document titled "Calculating Extreme Cold Weather Temperature" is intended to provide the source of temperature data for all Generator Owners, then this language should be modified to state "Extreme Cold Weather Temperature for their unit(s) including the calculation date, using NERC's guide for Calculating Extreme Cold Weather Temperature." Otherwise, the standard should be modified to clarify what sources of data are permissible, including data provided by the balancing authority (as noted in response to Question 2).

Proposed R3.5.1.2 requires Generator Owners to include within their cold weather preparedness plans "Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns." This language should be revised to clarify that the Generator Owner is only responsible for fuel supply and inventory within its control and knowledge, as Generator Owners do not always own the source or transportation for their fuel supply and thus cannot always identify or anticipate fuel supply and inventory concerns. For example, the requirement could be modified

to read: “Generating unit(s) cold weather data, to include: … Fuel supply and inventory concerns, to the extent known to the Generator Owner.”

Proposed R4 should clarify that a redesign of the unit(s) will not be required every five years. The standard requires that a Generator Owner calculate a new Extreme Cold Weather Temperature and update its cold weather preparedness plan and freeze protection measures as needed, or else, develop a Corrective Action Plan (CAP). As drafted, the standard could be interpreted as potentially requiring a redesign or retrofitting of a unit every 5 years. Vistra recommends that, in conjunction with adding a definition of “freeze protection measures” that includes procedures and temporary equipment among those measures (as recommended under Question 5), R4.3 could be modified to add the following sentence at the end: “If a CAP is required under this Requirement R4, the CAP cannot require a Generator Owner to redesign or retrofit its unit to meet the requirements in R1 or R2, as applicable, at the updated Extreme Cold Weather Temperature for the unit(s).”

Proposed R5 should clarify that the required training will be site-specific, rather than unit-specific: “Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-site specific training, and that identified entity shall provide annual training at each site to its maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s) at that site developed pursuant to Requirement R3.”

Proposed R6 should require a CAP to be developed within 150 days, rather than the earlier of 150 days or July 1. If a Generator Cold Weather Reliability Event occurs at the end of the winter season (or during a freak winter-like storm in March or April), a Generator Owner could have significantly fewer than 150 days to develop a CAP if the standard is based on the earlier of July 1 or 150 days. At the same time, even if an event occurred as late as early April, the 150 day standard would still require that the CAP be developed in advance of the next winter season (e.g., 150 days, or roughly 5 months, after April would still be in September). Thus, R6 should strike the alternative reference to July 1.

Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We discussed these comments and changes will not be made at this time.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	
Document Name	
Comment	
AES Clean Energy agrees with the comments submitted by NAGF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to NAGF.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	
NAGF membership is concerned with the requirement to retrofit or otherwise improve an existing generator's cold weather performance capability without NERC having the ability to address the compensation issue identified in the Joint Inquiry Report under Key	

Recommendation 2. There is also concern that the proposed design requirements are not sufficient to protect against another event like Uri. Until industry addresses the compensation issue, it is unreasonable to adopt a design requirement for existing generating units.

While the NAGF supports efforts for generators to take reasonable steps to provide reliable service through cold weather events, a mandatory requirement without reasonable compensation puts some generators at an unfair and potentially fatal disadvantage, which is detrimental for the electric industry. It has also been noted that some generators are unable to meet the design requirements due to technological issues or availability. With the efforts made by the drafting team to address these conflicting issues, the proposed requirements are optional at best and therefore unlikely to provide improved reliability.

Given all of the challenges that we are seeing across the different regions regarding infrastructure issues , the creation of more uncertainty in the generation arena has the potential to further aggravate the situation rather than improve it. NAGF members support ensuring generator operating parameters are communicated to, understood, and used in the planning processes by the appropriate entities is more appropriate and beneficial to reliability during these events than a blanket retrofit requirement to operate to an arbitrary condition.

The NAGF believes that the existing requirements in EOP-011 that are to be implemented no later than April 1, 2023, should be used first to determine if these proposed requirements are warranted. Until such time as these requirements become effective, NERC and FERC do not know where the need for further improvements exist.

To the extent that NERC and FERC wish to add to the reliability requirements related to cold weather operation, the NAGF proposes the following language:

“Generator Owners shall identify their minimum operating temperature based on operating history. This information shall include lowest temperature operated to, lowest wind chill temperature operated to, and the lowest temperature during which precipitation was occurring, if possible. These numbers shall be reviewed once each year to determine if new limits have been determined. “

Likes 0	
Dislikes 0	

Response

The Standard Drafting Team is appreciative of the comments provided. We discussed these comments and changes will not be made at this time.

Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	
Document Name	
Comment	
For all above questions,we are agaisnt this standard as for some Canadian entites, units already operate in cold weather annually from November to March. These requirements represent an added administrative burden.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We believe that facilities that have historically operated well during freezing temperatures are well positioned to meet the new requirements of EOP-012-1.	
Keith Jonassen - Keith Jonassen On Behalf of: John Pearson, ISO New England, Inc., 2; - Keith Jonassen	
Answer	
Document Name	
Comment	
ISO-NE appreciates the efforts of the SDT however, as an ISO acting as the RC and BA for our area ISO has some concerns as described in the above comments as well as in the comments provided by the SRC. It appears that the Standard as written will ensure continued reliable operation of the BES under normal cold weather conditions, but would have limited effect on “Extreme” cold weather conditions such as those experienced during the 2014 Polar Vortex, the 2021 Storm Uri, or the 1994 North American cold wave (January 18-22). ISO-NE recommends that the Standard address at a minimum the extreme cold temperatures and duration experienced during the 2021 Storm Uri which has been the primary example as the need for this new Standard. ISO-NE Supports the Comments Provided by the SRC.	

Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We discussed these comments and changes will not be made at this time.	
Jamison Cawley - Nebraska Public Power District - 1	
Answer	
Document Name	
Comment	

NPPD suggests removing the 'July 1' requirement for the deadline in generating a corrective action plan and making the deadline a straight 150 days from the event. If an event occurs in early March an entity might only have approx. 110 days to generate the corrective action plan. With a straight 150 days, an entity can still create the CAP before the next winter season.

We believe the timeframe for development of Corrective Action Plans (CAP) in R2 and R4.3 is unclear. The glossary definition of CAP is A list of actions and an associated timetable for implementation to remedy a specific problem. While the language is clear that CAPs are to be developed within the Requirements, it is not clear how long an entity has to develop the CAP.

Proposed language:

R2: "…shall develop a Corrective Action Plan (CAP) within 150 days for the identified issues…"

R4.3: "…and if not develop a CAP within 150 days for the identified issues…"

R6: "…shall develop a CAP, within 150 days that contains at a minimum:"

NPPD would like to propose the following language modification for Requirement R3.4:

Existing language "Annual inspection and maintenance of generating unit(s)…"

Proposed language “Annual inspection and maintenance *as determined by the results of the inspection,* of generating unit(s)…”	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Under R2, the GO should complete its review of existing units and develop a CAP by the Implementation Date, which is proposed to be five calendar years from governmental approval. The timeframe for development of the CAP for R4.3 is tied to the ongoing and reoccurring five-year review requirement of R4. In other words, pursuant to requirement R4, once every five calendar years the GO must satisfy 4.1-4.3 for that five-year cycle.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	
Document Name	
Comment	
Alliant Energy supports the comments submitted by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	
Document Name	
Comment	

Requirement R1

The MRO NSRF is concerned about Requirement R1, Bullet 1 as it relates to a "concurrent twenty (20) mph wind speed". The MRO NSRF believes that 20 mph is an arbitrary velocity that will not capture the actual conditions based on the geographic location of the generating unit, unnecessarily raise the operational cost of the generating unit and not increase the reliability of the generating unit, as the fixed velocity may be too low/high for the geographical location. Rather than used a fixed velocity the MRO NSRF would like to suggest allowing the Generator Owner to calculate the appropriate wind speed using a statical methodology similar to how the Extreme Cold Weather Temperature is calculated. Entity B would like to suggest the following Requirement R1 language modification and §6. Definitions Used in this proposed standard:

R1, Bullet 1: "… assuming a Concurrent Wind Speed on any exposed Generator Cold Weather Critical Components; or"

Concurrent Wind Speed – The wind speed equal to the highest X percentile of the hourly wind speeds for the geographic location of the generating unit, measured in December, January and February for the previous 30 years through the date the temperature is calculated.

Proposed language modifications:

The MRO NSRF would like to propose the following language modification for Requirement R3.4:

Existing language "Annual inspection and maintenance of generating unit(s)…"
Proposed language "Annual inspection and maintenance, as determined by the results of the inspection, of generating unit(s)…"

The MRO NSRF would like to propose the following language modification for Requirement R4:

Existing language "Once every five calendar years, each Generator Owner shall for each generating unit:"

Proposed language "Once every five calendar years, with a calendar year starting on the first day of a new year (January 1) after an activity pursuant to the subparts below has been completed, each Generator owner shall for each generating unit:"

The MRO NSRF believes defining the calendar year, as it is in NERC Reliability Standard PRC-005-6, will provide added confines to when the five year cycle begins and does not leave interpretation for it to be a 60-month cycle.

The MRO NSRF would like to propose the following language modification for Requirement R6: Existing language: "…experiences a Generator Cold Weather Reliability Event shall develop a CAP, within 150 days or by July 1, whichever is earlier, that contains at a minimum…" Proposed language: "…experiences a Generator Cold Weather Reliability Event shall develop a CAP, within 150 calendar days, that contains at a minimum…" We believe that 150 calendar days after a Generator Cold Weather Reliability Event should be the standard to develop a CAP. If the generating unit experiences a Generator Cold Weather Reliability Event on February 28, a Generator Owner will only have 120 days to develop a CAP. Since CAPs may take additional resources to analyze and develop, 150 calendar days provides the same amount of time for Generator Owners to develop a CAP regardless of when during the winter season a Generator Cold Weather Reliably Event occurs. In addition, to align with the language in NERC Reliability Standard PRC-004-6, Entity B is recommending the inclusion of the word "calendar". Also please consdier adding timeframe requirements for the development of Corrective Action Plans (CAP) in R2 and R4.3. The glossary definition of CAP is "A list of actions and an associated timetable for implementation to remedy a specific problem". While the language is clear that CAPs are to be developed within the Requirements, it is not clear how long an entity has to develop the CAP. Proposed language: R2: "…shall develop a Corrective Action Plan (CAP) within 150 days for the identified issues…" R4.3: "…and if not develop a CAP within 150 days for the identified issues…"

Likes 0	
Dislikes 0	

Response
Thank you for your comments. Under R2, the GO should complete its review of existing units and develop a CAP by the Implementation Date, which is proposed to be five calendar years from governmental approval. The timeframe for development of the CAP for R4.3 is tied to the ongoing and reoccurring five-year review requirement of R4. In other words, pursuant to requirement R4, once every five calendar years the GO must satisfy 4.1-4.3 for that five-year cycle.

Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	

Document Name	
Comment	
MidAmerican Energy supports both the MRO NSRF and EEI comments for this section.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF and EEI.	
Michele Richmond - Texas Competitive Power Advocates - NA - Not Applicable - Texas RE	
Answer	
Document Name	TCPA Comments on Revised NERC Weatherization Proposal - Filed 9-1-22.docx
Comment	
Please see attached comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The team has previously discussed cost recovery in the response to comments on the initial ballot. The SDT feels the language as written is clear and no further clarification is needed.	
Steven Sconce - EDF Renewable Energy - 5	
Answer	
Document Name	
Comment	

Note – From a design/development perspective, inverter-based generation resources are mostly operating to -25C for utility scale application. Any temperature below this would force the inverters to stop producing.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided.	
Mark Young - Tenaska, Inc. - 5	
Answer	
Document Name	EOP-012-1 Second Draft - Tenaska Comments Rev 4 final.docx
Comment	
See attached comments document	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The team has previously discussed cost recovery in the response to comments on the initial ballot. Please see the graphic in the Implementation Plan for more clarity on effective dates. The SDT feels the language as written is clear and no further clarification is needed.	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	
Document Name	
Comment	

MISO supports the comments submitted by the ISO/RTO Council Standards Review Committee (IRC SRC). In addition, we are submitting comments on behalf of MISO as an individual entity.

Guidance should be provided as to what is "economically feasible" so a consistent approach is used to assess "commercial constraints." (Part 7.1)

With respect to Part 7.1, which states:

"Each Generator Owner shall implement each CAP developed pursuant to Requirements R2, R4, or R6, or explain in a declaration why corrective actions are not being implemented due to any technical, *commercial*, or operational constraints as defined by the Generator Owner"

MISO observes that "commercial" aspects are typically outside of NERC's purview which raises the question: how will this provision be monitored and enforced without pre-defined criteria? Therefore, MISO asks the SDT to set guidance as to what is "economically feasible." Without meaningful guidance, providing a broad commercial "out" could encourage generators to elect this option as opposed to making improvements, particularly if a neighboring generator does likewise, thereby leaving the BES no more reliable than before the standard was drafted.

Finally, MISO acknowledges it is important to get this standard "right," particularly in light of the changing resource mix. As traditional resources retire and are replaced with intermittent resources, it will be important to have design criteria, such as the Extreme Cold Weather Temperature definition, set appropriately to ensure reliability benefits are achieved and maintained over time.

Likes 0	
Dislikes 0	

Response
The Standard Drafting Team is appreciative of the comments provided. The "commercial" term has been discussed at length by the SDT and changes will not be made at this time.

Imane Mrini - Austin Energy - 6	
Answer	

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Ferdinand - Decatur Energy Center LLC - 5	
Answer	
Document Name	
Comment	
Capital Power supports the North American Generators Forum (NAGF) response to this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to NAGF.	
Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3	
Answer	
Document Name	
Comment	

Madison Gas and Electric supports the comments from the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Adam Lee - MGE Energy - Madison Gas and Electric Co. - 4	
Answer	
Document Name	
Comment	
Madison Gas and Electric supports the comments of the MRO NSRF	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	
Document Name	
Comment	
We have 2 additional comments for this standard not covered in the previous comment sections. These comments are specific to R5 and R6 respectively.	

R5: In regards to the proposed verbiage requiring "generating unit-specific training", it is our opinion that this could be overly burdensome for stations with multiple units; particular for those stations with multiple units of a similar design (a.k.a. "sister" units). Recommend modifying this requirement to require station-specific training in lieu of generating unit-specific training.

It is our opinion that this modification will allow the GO/GOP the flexibility to develop their training modules with an appropriate level of detail so as to sufficiently train station personnel without requiring them to create multiple modules with similar or identical content.

R6: Concerning the proposed timeline for the development of a CAP, it is our recommendation that the July 1st date be removed from this requirement. The rationale for this recommendations is thus: 150 days prior to July 1st is Feb 1st for non-leap years and Feb 2nd for leap years. Moreover, the July 1st timeline is further condensed if a Generator Cold Weather Reliability Event (GCWRE) occurs in March or April. Lastly, the stated intent of the timeframe options within the Technical Rationale is to allow GO's to review multiple events holistically following a winter season. In certain areas of the country, a GCWRE could realistically occur as early as late-October. In this instance, the latest possible date for the development of a CAP would be March 30th.

Given that it is also realistic for a GCWRE to occur in March, 150 days seems a reasonable number of days to cover all but the most extreme scenarios. Therefore, we recommend removing the hard deadline of July 1st.

Further, ACES has one member with the the following comments we would like to capture:

- It should be noted that wind turbines are also highly susceptible to cold weather events. Ignoring wind units at a time when the grid is using them more and more may have long lasting consequences.
- Finally, extreme weather should include calm cloudy days. The standard is targeted to units that are being retired more and more from the grid. Piling on additional compliance burdens will only hasten these units departures. The SDT should consider targeted reliability standards that require intermittent resources to run, ride through, and in general operate more reliably. Intermittent resources no longer operate on the periphery, they are a core component of the functional power grid.

Thank you for the opportunity to comment.

Likes 0	
Dislikes 0	
Response	

The Standard Drafting Team is appreciative of the comments provided. With regards to unit vs site specific training, this is approved language and the team believes that training can be developed holistically with unit-specific differences highlighted where applicable and as such, changes will not be made at this time. With respect to CAPs, the SDT believes the current timeline is adequate and changes will not be made at this time.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	
Document Name	
Comment	

Invenergy appreciates the SDT's time and work on this important project, and would like to offer the below additional comments.

Invenergy recommends the following change to R2 to better align it with R1:

For each generating unit(s) in commercial operation prior to [Effective Date of this requirement], the Generator Owner shall:

- *Add new or modify existing freeze protection measures as needed to provide the capability to operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature.*

Generating unit(s) that are not capable of operating for one (1) hour at its Extreme Cold Weather Temperature shall:

- *Develop a Corrective Action Plan (CAP) for the identified issue(s), including identification of any needed modifications to the cold weather preparedness plan required under Requirement R3;* ***or***
- *Explain in a declaration, any technical, commercial, or operational constraints as defined by the Generator Owner that preclude any ability to implement or modify appropriate freeze protection measures to provide capability of operating for one (1) hour at the documented Extreme Cold Weather Temperature.*

Corresponding changes to other sections of the standard that flow from this section should be made as well. In particular, the Violation Severity Level table for R2 should be edited to match those for R1.

Additionally, the SDT should consider adding language relieving Generator Owners of the need to develop CAPs for Generator Cold Weather Critical Components for which a technical, commercial, or operational constraint has already been declared. Lastly, the SDT should clarify how a Generator Owner is expected to incorporate the wind speed criterion in R1 ("...assuming a concurrent twenty (20) mph wind speed on any exposed Generator Cold Weather Critical Components;") into their design. Specifically, is it purely a design consideration, or is it meant to be factored into the calculation of the Extreme Cold Weather Temperature?	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. The team discussed the suggested changes to R2 and decided the existing language more closely aligned with the intent of the drafting team. For other items, we discussed these comments and changes will not be made at this time as they be more substantive than clarifying.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	
If "commercial" limitations can be defined by the GO, the auditor will have to respect and accept any commercial limitation which would allow the GO to exclude any unit.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC Regional Standards Committee	
Answer	

Document Name	
Comment	
Evidence Retention should contain the words “since the last audit”. The draft primarily has “…data or evidence to show compliance for three years”. This standard is geared towards GO’s. GO’s at NPCC are normally on a six-year audit cycle.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. We discussed these comments and changes will not be made at this time.	
Gerry Adamski - Cogentrix Energy Power Management, LLC - 5	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Thank you for your review.	
George Brown - Acciona Energy North America - 5	
Answer	
Document Name	

Comment	
Acciona Energy supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to MRO NSRF.	
Whitney Wallace - Calpine Corporation - 5 - WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	
Calpine notes that most Independent System Operators (ISOs) are currently undertaking regulatory or stakeholder processes to examine improving reliability related to extreme weather events. These processes include a review of current and potential future planning standards, determining appropriate capacity accreditation for different resources, including fuel security considerations, as well as potentially differentiated levels of capacity compensation for resources providing different levels of reliability. As a result, any further cold weather standards should be developed by the ISOs as part of these regional processes. Additionally, because compliance with the proposed Standard could result in a significant cost burden for GOs, the proposed Standard should be revised to clearly state that GOs must have a mechanism to recover costs incurred to comply with this Standard. The Standard contemplates that a GO may not be able to comply with the Standard due to "technical, commercial or operational constraints" but does not specifically provide that lack of cost recovery is a commercial constraint that provides an exception to implementation of a CAP. The proposed Standard should be revised to make this clear.	
Likes 0	
Dislikes 0	
Response	

The Standard Drafting Team is appreciative of the comments provided. Please see previous response to comments on cost recovery in the previous Ballot.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	
Document Name	
Comment	
Request the following language change for requirement R3.5.2 Generating Unit(s) minimum: Design temperature; ***OR***. Note the addition of the word "or".	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Bullets in standard requirements represent “or” and the team believes that the “or” in the bulleted list in 3.5.2 shows that only one of the three bullets is required for generating unit minimum. The team modeled the language after PRC-004 and will be keeping it as approved in second ballot.	
John Liang - Snohomish County PUD No. 1 - 6	
Answer	
Document Name	
Comment	
Request the following language change for requirement R3.5.2 Generating unit(s) minimum: Design temperature; ***OR***. Note the addition of the word "OR".	
Likes 0	
Dislikes 0	

Response
Thank you for your comment. Bullets in standard requirements represent “or” and the team believes that the “or” in the bulleted list in 3.5.2 shows that only one of the three bullets is required for generating unit minimum. The team modeled the language after PRC-004 and will be keeping it as approved in second ballot.
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)

Answer	
Document Name	

Comment
The SRC appreciates the efforts of the SDT and realizes it has the unenviable task of balancing the competing interests of many stakeholder groups. Nonetheless, as ISO and RTOs, we, as Balancing Authorities and Reliability Coordinators, have a great stake in ensuring BES reliability. As independent operators and planners, we neither own, operate nor maintain generation assets; we must rely on the GOs’ and GOPs’ cooperation and response to meet interconnected reliability requirements with limited authority. Consequently, the SRC has an obligation to bring to the SDT’s attention the comments mentioned above and the following additional comments. A. **Align Requirement 1 and Part 7.1 with FERC-NERC joint report Key Recommendation 1f to require operation at the Extreme Cold Weather Temperature (ECWT).** To recap, the second bullet in Requirement 1 states a GO must: Explain in a declaration, any technical, commercial, or operational constraints as defined by the Generator Owner that preclude the ability to *implement appropriate freeze protection measures* to provide capability of operating for twelve (12) hours at the documented Extreme Cold Weather Temperature. (see Recommendation #2) Additionally, Requirement 7, Part 7.1, requires a GO to implement each CAP, "or explain in a declaration why corrective actions are not being implemented due to any technical, commercial, or operational constraints as defined by the Generator Owner." The SRC identified several issues with the proposed language regarding declarations:

(1) Key Recommendation 1f from the Joint Report states the NERC Reliability Standards should be revised to, "require GOs to retrofit existing generating units, and when building new generating units, to design them, *to operate to a specified ambient temperature and weather conditions* (*e.g.*, wind, freezing precipitation)."

That language is quite prescriptive and does not provide for a technical, commercial or operational "out" (as currently contained in the draft Standard). The concern with providing a broad commercial "out" is it could encourage generators to elect this option as opposed to making improvements, particularly if a neighboring competitor chooses to do likewise, thereby leaving the BES no more resilient than before the Standard was drafted.

(2) The Standard does not identify to whom the GO provides the declaration. The SRC recommends the GO provide declarations to the RC and BA.

(3) Using the phrase "as defined by the Generator Owner" gives the GO absolute discretion to determine what constraints are valid. The SRC believes the standard should require documentation demonstrating the GO cannot comply with the Standard (such as an engineering analysis) to make it "auditable" by a Regional Entity.

B. **Align wind speed requirements for new (R1) and existing (R2) generating units.** Requirement 2 requires an existing unit to demonstrate it can, "...operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature."

Requirement 1 indicates new units must operate at the ECWT, "assuming a concurrent twenty (20) mph wind speed." The SRC believes Requirement 2 should also include a twenty (20) mph wind speed on any exposed Generator Cold Weather Critical Components.

C. **Revise Part 7.1 to align with FERC-NERC joint report Key Recommendation 1d by requiring implementation of a CAP for identified equipment.** Collectively, Requirements 2, 6 and 7 require development and implementation of a CAP.

Key Recommendation 1d. in the Joint Report states the GO should implement a CAP for the identified equipment, ***and*** evaluate whether a CAP applies *to similar equipment for its other units* and: (i) either revise its cold weather preparedness plan or (ii) explain in a declaration why no revisions to the cold weather preparedness plan are appropriate.

The intent of this language is not to allow the GO to use a declaration to avoid implementing a CAP for *the equipment that* ***actually experienced*** *the forced outage, derate or failure to start.* Rather, the intent of the "declaration option" is to provide some leeway and

flexibility to the GO when determining whether the CAP should also apply to *similar equipment for other generating units* the GO owns). Therefore, the SRC does not support the current language that would allow generating units that **actually experienced** an outage, derate or failure to start to avoid implementing a CAP by providing a declaration regarding the unit that experienced the GCWRE.

Additionally, Key Recommendation 1d. from the Joint Report states a new Standard should, "specify the specific timing for the CAP to be developed and implemented…but the CAP should be developed as quickly as possible, and *be completed by no later than the beginning of the next winter season*." As written, the Standard does not contain a requirement to develop a CAP "as quickly as possible" and ensure the CAP is completed "no later than the beginning of the next winter season." The SRC recommends adding language to address timing in the standard.

Finally, the Standard contains no criteria regarding the quality of a CAP (*e.g.*, review/approval by another entity). The SRC believes the Standard should require an unaffiliated, qualified third-party to review and approve a proposed CAP similar to the requirement in CIP-014.

D. **Require unaffiliated third-parties to review and approve proposed measures (akin to CIP-014).** Requirement 3.3 provides cold weather preparedness plans must include (among other things):

Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components which may include measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain)

Instead of saying "which *may* include measures," the requirement should read, "which *shall* include measures…."

Further, referring to the measures as "determined necessary by the GO" gives the GO absolute discretion to determine what measures to apply. The SRC proposes replacing "determined necessary" with "where applicable" as in the latter half of the requirement if the intent is to provide flexibility for generators with fully enclosed facilities (*e.g.*, those in the north that may not have to reduce the cooling effects of wind). In addition, the SRC believes some other entity should have the authority to review/approve appropriate measures. One possibility is to employ language like that used in CIP-014 in which an unaffiliated third-party verifies the work product.

E. **Additional Comments.** The SRC makes the following comments it considers less critical than those mentioned above yet still worthy of consideration.

(1) The definition of GCWRE (in sub-section (2)) includes, "a start-up failure where the unit fails to synchronize *within a specified start-up time*." The definition does not make clear how to determine the appropriate start-up time. The SRC proposes replacing "***a*** specified start-up

time” with "its specified longest start-up time: (i) pursuant to its design specifications, (ii) communicated to its BA or (iii) pursuant to its agreement to serve load."

(2) The definition of GCWRE applies to events, “for which the apparent cause(s) is due to freezing of equipment within the Generator Owner’s control and….” That wording indicates the event must be “apparently” due to freezing (with no way to determine whether freezing “apparently” caused the event). Thus, the SRC proposes replacing that phrase with "due to failure of equipment within the Generator Owner’s control when..."

(3) As written, the Generator Cold Weather Critical Component includes the phrase “which would likely lead to a Generator Cold Weather Reliability Event.” That phrase includes subjective language (“would likely lead to”) open to differing interpretations by different people. The SRC recommends revising the definition to read: "Any generating unit component or associated fixed fuel supply component, under the Generator Owner’s control, susceptible to extreme cold weather that could cause a Generator Cold Weather Reliability Event."

(4) The first bullet in Requirement 1 includes, "assuming a concurrent twenty (20) mph wind speed on any exposed Generator Cold Weather Critical Components." The SRC believes GOs should have to take into account the wind effect on the *entire facility* (not just Cold Weather Critical Components). Thus, the SRC believes that phrase should read simply, "assuming a concurrent twenty (20) mph wind."

The SRC wishes to express our sincere gratitude to the Project’s Standard Drafting Team Members and supporting roles. We understand the many work hours needed in developing multiple documents, as well as responding to comments. Please know we appreciate your hard work and dedication to this Project.

Likes 0	
Dislikes 0	

Response

The Standard Drafting Team is appreciative of the comments provided. For Additional Comments 3 and 4, these topics will be discussed further during Phase 2 of this standards drafting timeline. The SDT discussed the other comments provided and changes will not be made at this time.

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

Answer	

Document Name	
Comment	
AEPC has signed on to ACES comments, please see their responses. Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to ACES.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	
Document Name	
Comment	
Avista recommends some reconsideration as to the applicability of the EOP 12-2 as it relates to ALL BES generating facilities. Both the letter and intent of the draft standard appear to be related specifically to thermal or steam process plants that use a Rankin cycle to generate electricity, and their susceptibility for freezing during cold weather. Can the permit team under Part 2 reconsider the applicability of facilities to consider to just those facilities related to the Rankin cycle that use steam as a means of generating electricity. Many facilities such as hydroelectric facilities internal combustion generation, wind turbine generators, and are much less susceptible to extreme cold weather and should not be treated the same regarding compliance requirements of such a standard.	
Likes 0	
Dislikes 0	

Response
The Standard Drafting Team is appreciative of the comments provided. Please see the comment responses to Question 3 around applicability.

Rhonda Jones - Invenergy LLC - 5	
Answer	
Document Name	

Comment

Invenergy appreciates the SDTs time and work on this important project, and would like to offer the below additional comments.

Invenergy recommends the following change to R2 to better align it with R1:

For each generating unit(s) in commercial operation prior to [Effective Date of this requirement], the Generator Owner shall:

- Add new or modify existing freeze protection measures as needed to provide the capability to operate for a period of not less than one (1) hour at the unit(s) Extreme Cold Weather Temperature.

Generating unit(s) that are not capable of operating for one (1) hour at its Extreme Cold Weather Temperature shall:

- Develop a Corrective Action Plan (CAP) for the identified issue(s), including identification of any needed modifications to the cold weather preparedness plan required under Requirement R3; **or**
- Explain in a declaration, any technical, commercial, or operational constraints as defined by the Generator Owner that preclude any ability to implement or modify appropriate freeze protection measures to provide capability of operating for one (1) hour at the documented Extreme Cold Weather Temperature.

Corresponding changes to other sections of the standard that flow from this section should be made as well. In particular, the Violation Severity Level table for R2 should be edited to match those for R1.

Additionally, the SDT should consider adding language relieving Generator Owners of the need to develop CAPs for Generator Cold Weather Critical Components for which a technical, commercial, or operational constraint has already been declared.

Lastly, the SDT should clarify how a Generator Owner is expected to incorporate the wind speed criterion in R1 ("...assuming a concurrent twenty (20) mph wind speed on any exposed Generator Cold Weather Critical Components;") into their design. Specifically, is it purely a design consideration, or is it meant to be factored into the calculation of the Extreme Cold Weather Temperature?	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. The team discussed the suggested changes to R2 and decided the existing language more closely aligned with the intent of the drafting team. For other items, we discussed these comments and changes will not be made at this time as they be more substantive than clarifying.	
LaKenya VanNorman - LaKenya VanNorman On Behalf of: Aaron Casto, Florida Municipal Power Pool, 6; Carl Turner, Florida Municipal Power Agency, 5, 3, 4, 6; Chris Gowder, Florida Municipal Power Agency, 5, 3, 4, 6; Dan O'Hagan, Florida Municipal Power Agency, 5, 3, 4, 6; David Owens, Gainesville Regional Utilities, 1, 5, 3; Jade Bulitta, Florida Municipal Power Agency, 5, 3, 4, 6; Neville Bowen, Ocala Utility Services, 3; - LaKenya VanNorman, Group Name Florida Municipal Power Agency (FMPA)	
Answer	
Document Name	
Comment	
FMPA also supports the comments of the Transmission Access Policy Study Group (TAPS), which are as follows: We understand R1 and R2 as requiring GOs to implement freeze control measures that they reasonably believe, based on good engineering judgment and their experience with their particular units and weather patterns, will result in the unit being able to operate continuously for the applicable time at the Extreme Cold Weather Temperature. Our understanding of the proposed requirements is that if a new or existing unit experiences a Forced Outage as a result of a Generator Cold Weather Reliability Event, even if the Forced Outage occurs after less than twelve hours (for a new generator) or one hour (for an existing generator) of continuous operations, the Forced Outage will not constitute evidence of noncompliance with R1 or R2. Instead, the GO will develop and implement a CAP pursuant to R6 and R7, as it would in response to any Generator Cold Weather Reliability Event. The contrary interpretation—that R1 and R2 require freeze protection measures that are 100% guaranteed to work—would require a level of certainty that simply does not exist. Generators are complex machines; they sometimes	

fail in unforeseen ways. This problem is only compounded by the fact that, as noted by multiple panelists at the April 27-28, 2022 FERC, NERC, and Regional Entities Technical Conference on Improving Winter-Readiness of Generating Units, a cold weather event cannot be simulated ahead of time to allow functional testing of a unit's set of winterization measures. Finding a GO noncompliant with R1 or R2 based on the failure in a particular instance of winterization measures it reasonably believed, based on the information available to it prior to the cold weather event, would be adequate, would not enhance reliability. We read R2 as providing that, where an existing unit is *not* capable of operating continuously for one hour at the Extreme Cold Weather Temperature, the method by which the GO "ensure[s] its generating unit(s) add new or modify existing freeze protection measures as needed" is the development of a CAP pursuant to R2. In other words, a GO demonstrates compliance with R2 by demonstrating either that it has implemented appropriate freeze protection measures, or that it has developed a CAP. The SDT has indicated that it plans to revisit the language of EOP-012-1 as part of Phase 2 of this project. Although we believe that our readings of the requirements, as outlined above, are consistent with the SDT's intent, we strongly recommend that Phase 2 clarify the language of R1 and R2 on these issues. Expressing the SDT's intent more clearly would reduce the risk of confusion and conflicting interpretations.	
Likes 0	
Dislikes 0	
Response	
The Standard Drafting Team is appreciative of the comments provided. The SDT discussed the comments provided and changes will not be made at this time.	
Natalie Johnson - Enel Green Power - 5	
Answer	
Document Name	2021-07_Unofficial_Comment_Form_second ballot_082022 (Enel 9-1-2022).docx
Comment	

Enel would like clarifications included that criteria applies only to available capacity as indicated by the forecasted power curve. Intermittent resources may not be available due to low wind or irradiance. Another example would be a planned outage for maintenance. It should be clarified that criteria applies to available capacity and not nameplate for intermittent resources. Enel suggests this clarification could be added with an accompanying footnote in the appropriate places.

Enel also suggests that R2 adds the following clarifying language: Generating unit(s) that are not capable of operating for one (1) hour at its Extreme Cold Weather Temperature shall develop a Corrective Action Plan (CAP), ***according to R7,*** for the identified issues, including identification of any needed modifications to the cold weather preparedness plan required under Requirement R3.

Additionally, Enel suggests that the language for CAPS only refer to 150 days for a deadline without the July 1 reference for clarity and fairness so everyone gets the same deadline.

Enel agrees with MRO NSRF's concern regarding the concurrent twenty (20) mph wind speed.

Likes 0	
Dislikes 0	

Response

The Standard Drafting Team is appreciative of the comments provided. Please see the comment responses to Question 3 around applicability. The SDT discussed the other comments provided and changes will not be made at this time.