Comment Report

Project Name:	2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination | Draft 3 EOP-012-2
Comment Period Start Date:	1/10/2024
Comment Period End Date:	1/22/2024
Associated Ballots:	2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination | Phase 2 EOP-012-2 | Non-Binding Poll AB 3 NB 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination | Phase 2 EOP-012-2 AB 3 ST 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination | Phase 2 Implementation Plan | EOP-012-2 AB 3 OT

There were 63 sets of responses, including comments from approximately 175 different people from approximately 118 companies representing 10 of the Industry Segments as shown in the table on the following pages.

Questions

See the unofficial comment form for additional information: https://www.nerc.com/pa/Stand/Project202107ExtremeColdWeatherDL/2021-07_Unofficial_Comment_Form_AB%202%20EOP-012-2_011024.docx

1. To address the P66 directive, the SDT removed the three examples contained in the proposed definition of Generator Cold Weather Constraint and revised the definition. Do you agree that the revised definition of Generator Cold Weather Constraint provides sufficient clarity to the requirements in EOP-012-2, and is auditable? If you do not agree, please provide your recommended language.

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2. As opposed to staggering, the SDT chose to shorten the time frame in the implementation plan for the standard as a whole. The SDT responded to industry comments with concerns that staggering did not need to be explicitly required as this will happen naturally due to outage scheduled and resource availability. Do you agree with this approach?

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3. Based on industry comments that constraints are expected to be rare and the conditions that drive them will not change frequently, the SDT moved from an annual to a 5-year review. Do you agree with this change?

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4. Per the FERC directive to shorten the timeframe to implement freeze protection measures on existing units, the SDT proposes an implementation plan where all requirements of EOP-012-2 go into effect on the effective date of the standard except Requirement R3 which has a 12-month implementation time frame. The chart below is included to compare the EOP-012-1 and EOP-012-2 IPs for this requirement which requires GOs to have the capability to operate at the ECWT or a CAP written by the effective date of the requirement. After reviewing the comments on the previous posting, the team determined to not change the timeframe in the posted implementation plan for reasons explained in the Consideration of Comments. If you have any further comments, please provide them here.

5. The SDT proposes that the modifications in EOP-012-2 meet the key recommendations in The Report as well as the directives in the FERC order 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.

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

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
MRO	Anna Martinson	1,2,3,4,5,6	MRO	MRO Group	Shonda McCain	Omaha Public Power District (OPPD)	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jamison Cawley	Nebraska Public Power District	1,3,5	MRO
					Jay Sethi	Manitoba Hydro (MH)	1,3,5,6	MRO
					Husam Al-Hadidi	Manitoba Hydro (System Preformance)	1,3,5,6	MRO
					Kimberly Bentley	Western Area Power Adminstration	1,6	MRO
					Jaimin Patal	Saskatchewan Power Coporation (SPC)	1	MRO
					Angela Wheat	Southwestern Power Administration	1	MRO
					George Brown	Pattern Operators LP	5	MRO
					Larry Heckert	Alliant Energy (ALTE)	4	MRO
					Terry Harbour	MidAmerican Energy Company (MEC)	1,3	MRO
					Dane Rogers	Oklahoma Gas and Electric (OG&E)	1,3,5,6	MRO

					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Bobbi Welch	Midcontinent ISO, Inc.	2	MRO
					Michael Ayotte	ITC Holdings	1	MRO
					Andrew Coffelt	Board of Public Utilities-Kansas (BPU)	1,3,5,6	MRO
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
Southern Company - Southern Company Services, Inc.	Colby Galloway	1,3,5,6	MRO,RF,SERC,Texas RE,WECC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Leslie Burke	Southern Company - Southern Company Generation	5	SERC
Dane Rogers	Dane Rogers			OG&E	Terri Pyle	OGE Energy - Oklahoma Gas and Electric Co.	1	MRO
					Donald Hargrove	OGE Energy - Oklahoma Gas and Electric Co.	3	MRO
					Patrick Wells	OGE Energy - Oklahoma Gas and Electric Co.	5	MRO

					Ashley F Stringer	OGE Energy - Oklahoma Gas and Electric Co.	6	MRO
Santee Cooper	Don Cribb	5		Santee Cooper	Paul Camilletti	Santee Cooper	1,3,5,6	SERC
					Domenic Ciccolella	Santee Cooper	1,3,5,6	SERC
ACES Power Marketing	Jodirah Green	1,3,4,5	MRO,RF,SERC,Texas RE,WECC	ACES Collaborators	Bob Soloman	Hoosier Energy Electric Cooperative	1	RF
					Scott Brame	North Carolina Electric Membership Corporation	3,4,5	SERC
					Jason Procuniar	Buckeye Power, Inc.	4	RF
					Amber Skillern	East Kentucky Power Cooperative	1	SERC
					Nick Fogleman	Prairie Power, Inc.	1,3	SERC
					Austin Towne	Western Farmers Electric Cooperative	1,5	Texas RE
					Scott Berry	Wabash Valley Power Association	3	RF
					Jordan Mcclellan	Southern Illinois Power Cooperative	1	SERC
Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
Electric Reliability Council of Texas, Inc.	Kennedy Meier	2		ISO/RTO Council Standards Review Committee (SRC)	Bobbi Welch	Midcontinent ISO, Inc.	2	RF
					Darcy O'Connell	California ISO	2	WECC
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Kennedy Meier	Electric Reliability	2	Texas RE

						Council of Texas, Inc.		
					Joshua Phillips	Southwest Power Pool, Inc. (RTO)	2	MRO
					Thomas Foster	PJM Interconnection, L.L.C.	2	RF
					Helen Lainis	Independent Electricity System Operator	2	NPCC
					John Pearson	ISO New England, Inc.	2	NPCC
FirstEnergy - FirstEnergy Corporation	Mark Garza	4		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy- FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
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
					Frank Lee	Pacific Gas and Electric Company	5	WECC
Black Hills Corporation	Rachel Schuldt	6		Black Hills Corporation - All Segments	Micah Runner	Black Hills Corporation	1	WECC
					Josh Combs	Black Hills Corporation	3	WECC
					Rachel Schuldt	Black Hills Corporation	6	WECC
					Carly Miller	Black Hills Corporation	5	WECC

Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC RSC	Gerry Dunbar	Northeast Power Coordinating Council	10	NPCC
					Alain Mukama	Hydro One Networks, Inc.	1	NPCC
					Deidre Altobell	Con Edison	1	NPCC
					Jeffrey Streifling	NB Power Corporation	1	NPCC
					Michele Tondalo	United Illuminating Co.	1	NPCC
					Stephanie Ullah-Mazzuca	Orange and Rockland	1	NPCC
					Michael Ridolfino	Central Hudson Gas & Electric Corp.	1	NPCC
					Randy Buswell	Vermont Electric Power Company	1	NPCC
					James Grant	NYISO	2	NPCC
					John Pearson	ISO New England, Inc.	2	NPCC
					Harishkumar Subramani Vijay Kumar	Independent Electricity System Operator	2	NPCC
					Randy MacDonald	New Brunswick Power Corporation	2	NPCC
					Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
					David Burke	Orange and Rockland	3	NPCC
					Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
					Salvatore Spagnolo	New York Power Authority	1	NPCC
					Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC

					David Kwan	Ontario Power Generation	4	NPCC
					Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	1	NPCC
					Glen Smith	Entergy Services	4	NPCC
					Sean Cavote	PSEG	4	NPCC
					Jason Chandler	Con Edison	5	NPCC
					Tracy MacNicoll	Utility Services	5	NPCC
					Shivaz Chopra	New York Power Authority	6	NPCC
					Vijay Puran	New York State Department of Public Service	6	NPCC
					ALAN ADAMSON	New York State Reliability Council	10	NPCC
					David Kiguel	Independent	7	NPCC
					Joel Charlebois	AESI	7	NPCC
					Joshua London	Eversource Energy	1	NPCC
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 and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC
					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC
					Nicole Goi	Sacramento Municipal Utility District	5	WECC
					Kevin Smith	Balancing Authority of	1	WECC

						Northern California		
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
					Gary Dollins	M and A Electric Power Cooperative	3	SERC
					William Price	M and A Electric Power Cooperative	1	SERC
					Olivia Olson	Sho-Me Power Electric Cooperative	1	SERC
					Mark Ramsey	N.W. Electric Power Cooperative, Inc.	1	SERC
					Heath Henry	NW Electric Power Cooperative, Inc.	3	SERC
					Tony Gott	KAMO Electric Cooperative	3	SERC
					Micah Breedlove	KAMO Electric Cooperative	1	SERC
					Brett Douglas	Northeast Missouri Electric Power Cooperative	1	SERC
					Skyler Wiegmann	Northeast Missouri Electric Power Cooperative	3	SERC
					Mark Riley	Associated Electric Cooperative, Inc.	1	SERC
					Brian Ackermann	Associated Electric Cooperative, Inc.	6	SERC

					Chuck Booth	Associated Electric Cooperative, Inc.	5	SERC
					Jarrod Murdaugh	Sho-Me Power Electric Cooperative	3	SERC

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1. To address the P66 directive, the SDT removed the three examples contained in the proposed definition of Generator Cold Weather Constraint and revised the definition. Do you agree that the revised definition of Generator Cold Weather Constraint provides sufficient clarity to the requirements in EOP-012-2, and is auditable? If you do not agree, please provide your recommended language.

Kimberly Turco - Constellation - 6

Answer

Document Name

Comment

Constellation has no additional comments.

Kimberly Turco on behalf on Constellation segements 5 and 6

Likes 0

Dislikes 0

Response

Alison MacKellar - Constellation - 5

Answer

Document Name

Comment

Constellation has no additional comments

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0

Dislikes 0

Response

James Keele - Entergy - 3

Answer

Document Name

Comment

Paragraph 88 directed NERC to revise EOP-012 to require a shorter implementation period and staggered implementation for unit(s) in a generator owner's fleet. Such an approach will reduce reliability risks more quickly.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

FirstEnergy supports this change to the proposed definition of Generator Cold Weather Constraint.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

None.

Likes 0

Dislikes 0

Response

Glen Farmer - Avista - Avista Corporation - 5

Answer

Document Name

Comment

Avista & EEI agree the proposed definition of Generator Cold Weather Constrains provides sufficient clarity to allow EOP-012-2 to be auditable.

Likes 0

Dislikes 0

Response

Dane Rogers - Dane Rogers On Behalf of: Donald Hargrove, OGE Energy - Oklahoma Gas and Electric Co., 3, 1, 5, 6; - Dane Rogers, Group Name OG&E

Answer

Document Name

Comment

OG&E supports comments submitted by MRO NSRF.

Likes 0

Dislikes 0

Response

Andrew Smith - APS - Arizona Public Service Co. - 5

Answer

Document Name

Comment

AZPS has no additional comments.

Likes 0

Dislikes 0

Response

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments

Answer

Document Name

Comment

Black Hills Corporation supports NAGF comments, specifically regarding consistency in auditing as this requirement is not easily “measurable”.

Likes 0

Dislikes 0

Response

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group

Answer

Document Name

Comment

MRO NSRF agrees that the revised definition provides sufficient clarity and is auditable.

Likes 0

Dislikes 0

Response

Robert Follini - Avista - Avista Corporation - 3

Answer

Document Name

Comment

Avista & EEI agree the proposed definition of Generator Cold Weather Constrains provides sufficient clarity to allow EOP-012-2 to be auditable.

Likes 0

Dislikes 0

Response

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

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

Answer

Document Name

Comment

NRG believes the changes generally address the issues raised by industry. NRG agrees with NAGF that there is still the potential for varying interpretation across regions. NERC will need to ensure that the regions are all applying the standard consistently across the continent.

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5

Answer

Document Name

Comment

NRG believes the changes generally address the issues raised by industry. NRG agrees with NAGF that there is still the potential for varying interpretation across regions. NERC will need to ensure that the regions are all applying the standard consistently across the continent.

Likes 0

Dislikes 0

Response

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 agrees with the revised definition and supports NAGF comments regarding implementation of this definition.

Likes 0

Dislikes 0

Response

Megan Melham - Decatur Energy Center LLC - 5

Answer

Document Name

Comment

We believe the changes made address the issues raised by industry. However, there is still a great deal of potential interpretation. NERC will need to ensure that the regions are all implementing the audit process consistently across the nation. There are already issues arising due to auditors not interpreting areas of EOP-011 consistently. While this issue is not specific to EOP-011 or the future EOP-012, NERC must address the issue as it related to these standards if we are going to continue to develop standards quickly instead of taking the time necessary to address areas where the "measurement" is not a simple equation.

Likes 0

Dislikes 0

Response

Colby Galloway - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer

Document Name

Comment

Southern agrees with EEI's comments such that the current draft is reasonable and provides sufficient clarity for audibility.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

The NAGF believes the changes made address the issues raised by industry. However, there is still a great deal of potential interpretation. NERC will need to ensure that the regions are all implementing the audit process consistently across the nation. There are already issues arising due to auditors not interpreting areas of EOP-011 consistently. While this issue is not specific to EOP-011 or the future EOP-012, NERC must address the issue as it

related to these standards if we are going to continue to develop standards quickly instead of taking the time necessary to address areas where the "measurement" is not a simple equation.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Per North American Generator Forum comments, auditors will need guidance to enforce EOP-012 in a consistent manner.

Likes 0

Dislikes 0

Response

Srinivas Kappagantula - Arevon Energy - 5

Answer

Document Name

Comment

Arevon agrees with NAGF Comments. The changes made address the issues raised by industry. However, there is still remains a great deal of potential interpretation. NERC will need to ensure that the regions are implementing the audit process consistently across the nation. There are already issues with auditors' inconsistent interpretations of EOP-011. While this issue is not specific to EOP-011 or the future EOP-012, NERC must address the issue as it related to these standards if we are going to continue to develop standards quickly instead of taking the time necessary to address areas where the "measurement" is not a simple equation.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

EEI agrees the proposed definition of Generator Cold Weather Constrains provides sufficient clarity to allow EOP-012-2 to be auditable.

Likes 0

Dislikes 0

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer

Document Name

Comment

NV Energy agrees that the revised definition provides sufficient clarity and is auditable.

Likes 0

Dislikes 0

Response

C. A. Campbell - LS Power Development, LLC - 5

Answer

Document Name

Comment

LS Power Development supports the NAGF comments & positions.

Likes 0

Dislikes 0

Response

Selene Willis - Edison International - Southern California Edison Company - 1,3,5,6

Answer

Document Name

Comment

“See comments submitted by the Edison Electric Institute” EEI agrees the proposed definition of Generator Cold Weather Constrains provides sufficient clarity to allow EOP-012-2 to be auditable.

Likes 0

Dislikes 0

Response

Rebecca Zahler - Public Utility District No. 1 of Chelan County - 5

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Thomas Foltz - AEP - 5

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Julie Hall - Entergy - 6, Group Name Entergy

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Richard Vendetti - NextEra Energy - 5

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Teresa Krabe - Lower Colorado River Authority - 5

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Laura Hankins - Laura Hankins On Behalf of: Matt Lewis, Lower Colorado River Authority, 5, 1; - Laura Hankins

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Rhonda Jones - Invenergy LLC - 5,6

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Mark Fowler - Mark Fowler On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Mark Fowler

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Colin Chilcoat - Invenergy LLC - 6

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Don Cribb - Santee Cooper - 5, Group Name Santee Cooper

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE is concerned the phrase “acceptable practices, methods, or technologies” is vague and could lead to inconsistent application of the definition of Generator Cold Weather Constraint.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

BC Hydro appreciates the drafting team’s efforts to include specific criteria to define the Generator Cold Weather Constraint, and believes that it is an improvement from the previous draft. The use of words such as “generally”, “broadly”, “may”, or “reasonable” however may not be conducive to measurable expectations at audit.

BC Hydro suggests that the second sentence in the third bullet (“A cost may be deemed “unreasonable” when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life.”) is an example that would be better suited in the Technical Rationale or other guidance document rather than definition itself

Likes 0

Dislikes 0

Response

Romel Aquino - Edison International - Southern California Edison Company - 1,3,5,6

Answer

Document Name

Comment

See comments submitted by the Edison Electric Institute

Likes 0

Dislikes 0

Response

Donald Lock - Talen Generation, LLC - 5

Answer

Document Name

Comment

The criterion, “Were not broadly implemented,” may disincentivize the development and adoption of emerging winterization technologies, despite the statement in the Technical Justification that the SDT has the opposite intention.

The expression, “reasonable cost consistent with good business practices,” can be widely interpreted, including as deeming all existing plants to be acceptable since they were winterized per the cost-effectiveness business practices of the owner. If good business practices is intended to mean something different it will have to be spelled-out.

Rather than continue to adjust semantics, however, the appropriate path forward is to set explicit winterization criteria for new facilities, update this list as new technologies become proven, and urge FERC to support reimbursement of owners of existing plants for retrofits to avoid freeze-up. The only mandatory action for existing plants should be to identify the dry bulb temperature, wind chill temperature and precipitation conditions under which forced outages and derates may occur, so that ISOs can determine the appropriateness of funding retrofits in their areas.

The historical records necessary for identifying the proven wind chill capability of a plant are easily obtained. Just download DBT and wind speed readings when pulling ECWT data from the NOAA website, then add a column for applying the wind chill formula.

Above all else, good business practices require that winterization capabilities mandated in EOP-012 must be done right the first time, nor should the goalposts move about over the years, ref. our responses for Question 5 below.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

AECI supports comments submitted by ACES.

Likes 0

Dislikes 0

Response

Ruchi Shah - AES - AES Corporation - 5

Answer

Document Name

Comment

AES Clean Energy supports the comments provided by NAGF. While AES Clean Energy appreciates the improvements made by the drafting team on the definition, there remains opportunities for potential interpretations by ERO CMEP staff. As stated by NAGF, GOs and GOPs currently are experiencing inconsistent interpretations of EOP-011-2 requirements during CMEP engagements across the United States. This revised definition of Generator Cold Weather Constraints may create mis-alignment between industry's interpretation of reliability as opposed to reliability expectations by the ERO CMEP Staff.

There is also lack of understanding from the Regional Entities on renewable generation resources and application of the Standard requirements to these resources. We strongly recommend that NERC develops an implementation guidance with industry trade groups or create a CMEP Practice Guide that reflects the expectations by both industry and ERO CMEP staff during CMEP engagements with industry stakeholders.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

AEPC has signed on to ACES comments:

We at ACES appreciate the effort put forth by the SDT to comply with the FERC order; however, we have grave concerns with the currently proposed definition of “Generator Cold Weather Constraint”. It is our opinion that the proposed language lacks objective auditable criteria. We believe that, as written, the proposed definition contains several undefined terms and phrases that are not auditable without further definition and/or clarification. We take specific issue with the following words and phrases contained within the definition:

- “reasonable”
  - We have great uneasiness with the repeated use of the word “reasonable”. We fear that the use of this word in a NERC Reliability Standard will potentially lead to inconsistent application throughout the various NERC regions. For instance, who is the responsible party that will determine whether something is “reasonable” or not? Should it be up to the discretion of each individual auditor to make a determination as to what is or is not “reasonable”? While the phrase “reasonable” may have some precedent in a court of law, NERC audits are not a court of law. Furthermore, auditors and Registered Entity SME’s may not be, nor are expected to be, lawyers. Thus, we recommend removing this word altogether.
- “broadly implemented”
  - What is the objective metric that will be used to determine which practices, methods, or technologies have been “broadly implemented”? Will NERC maintain a list of all freeze protection measures implemented at all generating stations and if so, what is the threshold whereby any given freeze protection measure will be considered “broadly implemented”?
- “regions that experience similar winter climate conditions”
  - How, and by whom, will a boundary be determined for the various so-called “regions”? Additionally, what is the metric for determining what constitutes “similar winter climate conditions”? It is our understanding that part of the basis for utilizing a statistical model for the “Extreme Cold Weather Temperature” definition was to provide clarity to the Generator Owner on determining what temperature triggers the requirement obligations. Furthermore, it is our understanding that this statistical approach was utilized as each generating station may very well experience unique winter climate conditions. In light of this well-reasoned statistical approach, we find it perplexing that such a subjective metric was utilized for this criteria of “Generator Cold Weather Constraint”.
- “prohibitively expensive” and “significant expenditures”

- While we appreciate the attempt made by the SDT to provide clarification on this matter, we have apprehension with these phrases because there is no objectively defined threshold for determining when costs are to be considered “unreasonable”. For example, a large investor-owned utility (“IOU”) has substantially more resources than a small electric cooperative. What may be a relatively minor expenditure to one could be “prohibitively expensive” or a “significant expenditure” to the other. We recommend that this criteria be modified to include a fixed metric utilizing a defined cost threshold. It is our opinion that this can best be expressed as a percentage of annual Operation and Maintenance (“O&M”) costs during the meteorological winter months.

We recommend using the following language:

Generator Cold Weather Constraint - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using one or more of the criteria below:

- Warranties that would be voided by application of a freeze protection measure(s).
- Reduction in summer capability.
- Decreases the reliability of the unit(s).
- Introduces an increased personnel or safety risk.
- Introduces a risk of noncompliance with environmental regulation(s).
- Compromised ability to provide ancillary service(s)
- No known technical solution for addressing the issue or implementation of suitable freeze protection measure(s) requires application of new technology(ies), or existing technology(ies) in a new application(s).
- The cost to implement a new, or modify an existing, freeze protection measure(s) exceeds five percent (5%) of the generating station’s most recent 5-year average Operation and Maintenance (“O&M”) costs during meteorological winter months.

Likes 0

Dislikes 0

Response

Casey Perry - PNM Resources - 1,3 - WECC,Texas RE

Answer

Document Name

Comment

PNM would recommend removing the first criteria bullet point “Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy” as it contradicts the second and third bullet point in the EOP-012-2 standard.

Likes 0

Dislikes 0

Response

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring

Answer

Document Name

Comment

WECC understands the need to expeditiously complete this project, and therefore will be casting an affirmative vote. We do not to have perfect get in the way of good. However, WECC still has some suggestions that would improve the standard and therefore provides the following for the drafting team to consider, either now or in the future if the standard is revisited.

The criteria provided are broad and may very well be implemented inconsistently. Items that will be a constant question by industry to the ERO Enterprise will be similar in nature to the followingis considered prohibitively expensive modifications? Significant expenditures? Minimal remaining life?

Perhaps Implementation Guidance can be generated that clearly illustrates the intent of the SDT. Industry should not be asking <span style="user-select: text;-webkit-use
svg+xml;base64,pd94bwwgdmvyc2lvbj0ims4wiiblbmnvzgluzz0ivvrgltgipz4kphn2zyb3awr0ad0inxb4iibozwlnahq9ijnwecigdmlld0jved0imcawidugmyigdmvyc2lvbj0ims4xiib4
0chm6ly9za2v0y2hhchauy29tic0tpgogicagphrpdgxlpmdyyw1tyxjfzg91ymxlx2xpbmu8l3rpdgxlpgogicagpgrlc2m+q3jlyxrlzcb3axroifnrzxrjac48l2rlc2m+ciagica8zybpzd0iz3jh
xllunvchkiihn0cm9rzt0iizmzntvgrii+ciagicagicagicagidxwyxroigq9ik0wldaunsbmnswwljuiiglkpsjmaw5lltitq29wes0xmci+pc9wyxropgogicagicagicagica8cgf0acbkpsjnmcwylju
y:100%'="">the ERO Enterprise what they consider the above terms mean. As is, the auditing of these details will result in no meaningful result outside of freeze protection measures not being implemented based on criteria that will be used inconsistently by Generator Owners. If the language remains, a Generator Owner will need to support each Generator Cold Weather Constraint with what they considered as criteria which, per FERC, will be submitted to FERC in some fashion.

Likes 0

Dislikes 0

Response

Lauren Giordano - Lauren Giordano On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; - Lauren Giordano

Answer

Document Name

Comment

We agree with some comments provided by ACES, AEPC, and Talen but are not going to restate each item specifically.

Likes 1

Dislikes 0

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer

Document Name

Comment

Proposed language is still open to audit interpretation (insufficient clarity due to undefined terms).

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

We at ACES appreciate the effort put forth by the SDT to comply with the FERC order; however, we have grave concerns with the currently proposed defini□on of “Generator Cold Weather Constraint”. It is our opinion that the proposed language lacks objec□ve auditable criteria. We believe that, as writen, the proposed defini□on contains several undefined terms and phrases that are not auditable without further defini□on and/or clarifica□on. We take specific issue with the following words and phrases contained within the defini□on:

- “reasonable”
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We recommend using the following language:

Generator Cold Weather Constraint - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using one or more of the criteria below:

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- Introduces a risk of noncompliance with environmental regulation(s).
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- The cost to implement a new, or modify an existing, freeze protection measure(s) exceeds five percent (5%) of the generating station's most recent 5-year average Operation and Maintenance ("O&M") costs during meteorological winter months.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

The **ISO/RTO Council (IRC) Standards Review Committee (SRC)** (consisting, for purposes of these comments, of CAISO, ERCOT, IESO, ISO-NE, PJM, MISO, NYISO, and SPP) does not believe that the revised **Generator Cold Weather Constraint (GCWC)** definition is sufficiently clear or auditable. Specifically, the SRC is concerned that the language regarding freeze protection measures is faulty, that the reference to "the decision" in the definition is uncle unreasonable costs is inherently subjective and unauditable. The SRC therefore believes that the revised GCWC definition does not fully meet FERC's directive that EOP-012-2 "include auditable criteria on permissible constraints," as stated in paragraph 66 of FERC's February 16, 2023 Order.

It is the SRC's understanding that the intent of the phrase "[f]reeze protection measures are not intended to refer to optimum practices, methods, or technologies" is to avoid placing an undue burden on Generator Owners by indicating that they are not obligated to implement novel and untested freeze protection measures that may ultimately prove to be ineffective. Unfortunately, this language does not convey this intent and could be understood to mean that optimum practices *never* qualify as freeze protection measures, which seems to run counter to the overall project goal of improving generator preparations for extreme cold weather events.

The SRC further understands that the SDT's intent is to model this portion of the GCWC definition on the definition of Good Utility Practice found in section 1.15 of FERC's Pro Forma Open Access Transmission Tariff (OATT). However, the SDT's proposed GCWC definition does not fully match the corresponding language in the OATT, which reads in pertinent part as follows: "Good Utility Practice is not intended *to be limited to* the optimum practice, method, or act *to the exclusion of all others*, but rather to be acceptable practices, methods, or acts generally accepted in the region, including those practices required by Federal Power Act section 215(a)(4)" (emphasis added). If the SDT intends to model the GCWC definition on the OATT definition, the SRC recommends that the GCWC definition be revised to more accurately capture the drafting team's intent by better aligning it with the

language used in the Pro Forma OATT as follows: “Freeze protection measure are not intended to **be limited** to optimum practices, methods, or technologies **to the exclusion of all others**, but **are also intended to include** acceptable practices, methods, or technologies . . . .” The SRC notes that as an alternative, the drafting team could remove the reference to “optimum practices, methods, or technologies” altogether, which would more clearly indicate that “acceptable practices, methods, and technologies . . .” is the core of the definition.

The SRC is also concerned that the reference to “acceptable practices, methods, or technologies **generally implemented** by the electric industry in areas that experience similar winter climate conditions” (emphasis added) does not provide an objective standard that can be effectively audited and fails to account for the real-world effectiveness (or lack thereof) of the freeze protection measures implemented, which is inappropriate for a standard designed to address weatherization failures. In addition, the SRC is concerned that this definition does not provide sufficient guidance on how widely a freeze protection technology must be deployed before it will be considered a “generally implemented” technology. Given the typical pace of change within the electric utility industry, it may take years for a new technology to be adopted widely enough to be considered “generally implemented.” The SRC is concerned that this, coupled with the five-year review period for GCWC declarations (as further detailed in the SRC’s response to question 3 below), will serve to delay and disincentivize the adoption of effective freeze protection technologies that happen to be new. To address these concerns, the SRC recommends that this language be revised to read “practices, methods, or technologies **that would reasonably be expected to result in effective facility performance while operating at the Extreme Cold Weather Temperature (ECWT)**.”

Next, the definition currently references “the facts known at the time the decision was made.” It is the SRC’s understanding that the decision referred to is the decision to declare a GCWC. However, the language as currently drafted could also be construed to refer to decisions made at the time a generation facility was designed, constructed, or commissioned. Therefore, the SRC recommends that this portion of the definition be clarified by revising it to read “the facts known at the time the decision **to declare a Generator Cold Weather Constraint** was made . . . .”

Finally, the SRC is concerned that the reasonable cost criteria for determining whether a cost-based GCWC can be declared are subjective and unauditable. Interpretation of the proposed reasonable cost criteria is likely to vary widely from entity to entity and from region to region, as a merchant generator and a rate-regulated investor-owned vertically integrated utility are likely to arrive at very different conclusions regarding what constitutes a “prohibitively expensive modification,” a “significant expenditure,” or “minimal remaining life” given the differing regulatory regimes and obligations applicable to each type of entity. The definition also lacks guidance that auditors can apply uniformly and consistently when confronted with differing interpretations in the course of reviewing GCWC declarations. The SRC therefore believes the proposed reasonable cost criteria for determining whether a GCWC can be declared do not address FERC’s concerns regarding the ambiguity of constraint declarations, as discussed in paragraph 6 of FERC’s February 16, 2023 Order.

This inherent subjectivity would effectively allow Generator Owners to declare a GCWC simply by asserting that implementing a given freeze protection measure would constitute a “prohibitively expensive modification[]” or a “significant expenditure[],” and that the affected facility has “minimal remaining life.” This, combined with the auditability challenges discussed in the preceding paragraph, means that GCWCs could easily be used excessively, effectively resulting in EOP-012-2 failing to meet FERC’s directive to “capture[] all bulk electric system generation resources needed for reliable operation and exclude[] only those generation resources not relied upon during freezing conditions” as required by paragraph 58 of FERC’s February 16, 2023 Order. This risk could be mitigated through the use of objective, auditable criteria for cost-based GCWC declarations, or at the very least through the use of a process and analysis akin to the review and approval process for Technical Feasibility Exceptions under Appendix 4D of the NERC Rules of Procedure (particularly the Regional Entity preapproval process in section 3.0 of Appendix 4D).

Likes 0

Dislikes 0

Response

Marty Hostler - Northern California Power Agency - 3,4,5,6
Answer
Document Name
Comment
NO. We agree with some comments provided by ACES, AEPC, and Talen but are not going to restate each item specifically.
Likes 0
Dislikes 0
Response

See the unofficial comment form for additional information: https://www.nerc.com/pa/Stand/Project202107ExtremeColdWeatherDL/2021-07_Unofficial_Comment_Form_AB%202%20EOP-012-2_011024.docx

2. As opposed to staggering, the SDT chose to shorten the time frame in the implementation plan for the standard as a whole. The SDT responded to industry comments with concerns that staggering did not need to be explicitly required as this will happen naturally due to outage scheduled and resource availability. Do you agree with this approach?

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
NO. It should not be implemented as currently drafted and until a cost vs reliability benefit analysis is provided.	
Likes 0	
Dislikes 0	
Response	

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	
We agree with the elimination of staggering, and we do not agree with the shorten timeframe.	
Likes 0	
Dislikes 0	
Response	

Lauren Giordano - Lauren Giordano On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; - Lauren Giordano	
Answer	No
Document Name	
Comment	
It should not be implemented as currently drafted and until a cost vs reliability benefit analysis is provided.	
Likes 0	

Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation agrees in removing the staggering approach from the previous redline, however does not agree with the new implementation dates and recommends remaining with EOP-012-1 original dates.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
The proposed implementation time frame is too short.	
Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
“See comments submitted by the Edison Electric Institute” EEI supports the modifications made to the EOP-012 Implementation Plan. *In P 64 of the FERC order, the Commission expressed concern that a generator owner may make a constraint declaration without informing planning and operational entities (e.g., the balancing authority) that are expecting the reliable operation of the generating unit to its Extreme Cold Weather*	

Temperature. To address this concern, the SDT has developed R8 to require the GO to update the generating unit's data specification regarding operational limitations to the generator unit's capability and availability under R1.	
Likes 0	
Dislikes 0	
Response	
C. A. Campbell - LS Power Development, LLC - 5	
Answer	Yes
Document Name	
Comment	
LS Power Development supports NAGF comments & positions.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
NV Energy agrees with the approach taken by the Standard Drafting Team to address this issue.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the modifications made to the EOP-012 Implementation Plan.	

Likes 0	
Dislikes 0	
Response	
Srinivas Kappagantula - Arevon Energy - 5	
Answer	Yes
Document Name	
Comment	
Arevon agrees with NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
The NAGF supports the proposed implementation schedule.	
Likes 0	
Dislikes 0	
Response	
Mark Fowler - Mark Fowler On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Mark Fowler	
Answer	Yes
Document Name	
Comment	
Ameren believes It will be difficult to implement freeze protection measures within the specified timeframe. It is not clear what requirements are going to be effective this year or how implementation will be phased in.	
Likes 0	
Dislikes 0	

Response	
Colby Galloway - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern agrees with EEI that the current implementation plan is sufficient to address the concerns with staggering and the shortened time frame accomplishes the desire by the FERC directive.	
Likes 0	
Dislikes 0	
Response	
Casey Perry - PNM Resources - 1,3 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
PNM and TNMP agree with new implementation dates in the implementation plan.	
Likes 0	
Dislikes 0	
Response	
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 approach.	
Likes 0	
Dislikes 0	
Response	

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	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Avista agrees with these comments and the EEI comments. EEI supports the modifications made to the EOP-012 Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
MRO NSRF agrees with the approach taken by the Standard Drafting Team to address this issue. *In P 64 of the FERC order, the Commission expressed concern that a generator owner may make a constraint declaration without informing planning and operational entities (e.g., the balancing authority) that are expecting the reliable operation of the generating unit to its Extreme Cold Weather Temperature. To address this concern, the SDT has developed R8 to require the GO to update the generating unit's data specification regarding operational limitations to the generator unit's capability and availability under R1.*	
Likes 0	
Dislikes 0	

Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS agrees with this approach.	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
There are still concerns from a budgetary, labor and/or parts constraints to obtain the objective.	
Likes 0	
Dislikes 0	
Response	
Dane Rogers - Dane Rogers On Behalf of: Donald Hargrove, OGE Energy - Oklahoma Gas and Electric Co., 3, 1, 5, 6; - Dane Rogers, Group Name OG&E	
Answer	Yes
Document Name	
Comment	
OG&E supports comments submitted by MRO NSRF.	
Likes 0	
Dislikes 0	
Response	

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	Yes
Document Name	
Comment	
AECI supports comments submitted by ACES.	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Avista agrees with these comments and the EEI comments. EEI supports the modifications made to the EOP-012 Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes

Document Name	
Comment	
FirstEnergy supports the EOP-012-2 Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
James Keele - Entergy - 3	
Answer	Yes
Document Name	
Comment	
In P 64 of the FERC order, the Commission expressed concern that a generator owner may make a constraint declaration without informing planning and operational entities (e.g., the balancing authority) that are expecting the reliable operation of the generating unit to its Extreme Cold Weather Temperature. To address this concern, the SDT has developed R8 to require the GO to update the generating unit's data specification regarding operational limitations to the generator unit's capability and availability under R1.	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	

Answer	Yes
Document Name	
Comment	
Constellation has no additional comments. Kimberly Turco on behalf on Constellation segements 5 and 6	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Don Cribb - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rhonda Jones - Invenergy LLC - 5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Megan Melham - Decatur Energy Center LLC - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Tracy MacNicoll - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laura Hankins - Laura Hankins On Behalf of: Matt Lewis, Lower Colorado River Authority, 5, 1; - Laura Hankins	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Wei Shao, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rebecca Zahler - Public Utility District No. 1 of Chelan County - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	

Same comment about consideration as above.

Shortening the Implementation Plan is appropriate but no changes were made outside the removal of the “staggering” language. As is, existing units will still have an additional year to comply per the Implementation Plan for R3. Just so there is not future debate on the expectations for ECWT calculation expectations- Is it the SDT clearly indicating that units (existing **and new** moving forward) will require a ECWT day 1 of applicability to EOP-012-2? In consideration of comments the SDT repeatedly indicated “The ECWT is based on the location of the proposed unit and **can** be calculated prior to operation at which time the ability to operate at the ECWT will be required.” While the statement is correct there needs to be clarity provided by the SDT because R1 defines a periodic review not an establishment of initial performance. And the Initial Performance language provided in the Implementation Plan only addresses **existing units** and their review expectations. Disagreements on applicability of R1 for new units upon COD will result if clarity is not provided. Please state with utmost clarity that ECWT is to be calculated prior to COD to eliminate misunderstandings or further delay of improvements to reliable operations during extreme weather for units that will be considered “new” after the effective date of EOP-012 is passed. If an initial performance period to establish an ECWT is not defined, per past Enforcement proceedings, an entity will have the periodic time period stated in the Requirement to perform the actions (in this case five calendar years). New entrants to the grid would continue to extend the

reliability risk. The verbiage within the other Requirements do not mitigate this gap and depend upon R1 to be completed. To mitigate this reliability gap WECC suggest changing the Initial Performance of Periodic Requirements language to the following:

Initial Performance of Periodic Requirements Existing applicable generating unit(s) for Registered Entities shall be compliant with Requirement R1 by the effective date. Registered Entities with existing applicable unit(s) shall perform their first periodic review for those existing units under Requirement R1 by no more than 60 months after the effective date of EOP-012-2. Newly applicable generating unit(s) shall be compliant with Requirement R1 by their commercial operating date and a periodic review under Requirement R1 shall be performed no more than 60 months after their commercial operating date.

Likes 0	
Dislikes 0	

Response

See the unofficial comment form for additional information: https://www.nerc.com/pa/Stand/Project202107ExtremeColdWeatherDL/2021-07_Unofficial_Comment_Form_AB%202%20EOP-012-2_011024.docx

3. Based on industry comments that constraints are expected to be rare and the conditions that drive them will not change frequently, the SDT moved from an annual to a 5-year review. Do you agree with this change?

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

Answer	No
Document Name	

Comment

Once a constraint is declared, the SRC is concerned that a five-year review period will delay the identification and adoption of new freeze protection technologies. Since the proposed GCWC definition implies that generators are only required to implement freeze protection technologies that are "generally implemented by the electric industry in areas that experience similar winter climate conditions," the standard does not provide an incentive for generators to install new freeze protection technologies. As a result, new technologies are unlikely to be installed during the gap between constraint reviews and may not even be installed as a result of the constraint review, as it is unclear how widely a technology must be used before it will be considered "generally implemented." Given the typical pace of change within the electric utility industry, it may take years for a new technology to be adopted widely enough to be considered "generally implemented." Consequently, the SRC believes that the best way to ensure that new freeze protection technologies are timely evaluated and implemented is to combine an annual constraint review process with the SRC's proposed revision of the relevant portion of the GCWC definition to read "practices, methods, or technologies **that would reasonably be expected to result in effective facility performance while operating at the Extreme Cold Weather Temperature (ECWT)."**

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 6

Answer	Yes
Document Name	

Comment

Constellation has no additional comments.

Kimberly Turco on behalf on Constellation segements 5 and 6

Likes 0	
Dislikes 0	

Response

Alison MacKellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy agrees with this change from annual to 5-year review.	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	

Answer	Yes
Document Name	
Comment	
A review periodicity of five years is appropriate. Constraints may be far from rare, however, since they may for example be declared for most if not all wind turbines regarding blading anti-icing systems.	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Avista agrees with EEI, & supports the change from an annual review to a 5 year review.	
Likes 0	
Dislikes 0	
Response	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	Yes
Document Name	
Comment	
AECI supports comments submitted by ACES.	
Likes 0	
Dislikes 0	
Response	
Dane Rogers - Dane Rogers On Behalf of: Donald Hargrove, OGE Energy - Oklahoma Gas and Electric Co., 3, 1, 5, 6; - Dane Rogers, Group Name OG&E	
Answer	Yes

Document Name	
Comment	
OG&E supports comments submitted by MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS agrees with this change.	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
MRO NSRF is supportive of the change to a 5-year review.	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	

Avista agrees with these comments and the EEI comments. EEI supports the modifications made to the EOP-012 Implementation Plan.

Likes 0	
Dislikes 0	

Response

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

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 with this change in frequency.

Likes 0	
Dislikes 0	

Response

Casey Perry - PNM Resources - 1,3 - WECC,Texas RE

Answer	Yes
Document Name	

Comment

PNM and TNMP agree with new moving the annual review to a 5 year review.

Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
Same comment regarding consideration as above. Annual reviews may actively capture “broadly implemented” practices, methods, or technologies more effectively. Assuming “rare” does not seem to line up with the amount of effort provided by industry to call out constraints and attempt to define criteria for the constraints.	
Likes 0	
Dislikes 0	
Response	
Colby Galloway - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern agrees with EEI and supports the change to a 5-year review.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
The addition of the term “or as needed” adds to the expectation for GO to review/update the Constraint declaration and operating limitations.	

Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the change from an annual review to a 5 year review.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
NV Energy is supportive of the change to the 5-year review.	
Likes 0	
Dislikes 0	
Response	
C. A. Campbell - LS Power Development, LLC - 5	
Answer	Yes
Document Name	
Comment	
LS Power Devleopment agrees with the 5-year review to align other review requirements in this standard.	
Likes 0	
Dislikes 0	

Response	
Selene Willis - Edison International - Southern California Edison Company - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
“See comments submitted by the Edison Electric Institute” EEI supports the change from an annual review to a 5 year review.	
Likes 0	
Dislikes 0	
Response	
Rebecca Zahler - Public Utility District No. 1 of Chelan County - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
James Keele - Entergy - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Wei Shao, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laura Hankins - Laura Hankins On Behalf of: Matt Lewis, Lower Colorado River Authority, 5, 1; - Laura Hankins	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tracy MacNicoll - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Megan Melham - Decatur Energy Center LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lauren Giordano - Lauren Giordano On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; - Lauren Giordano	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rhonda Jones - Invenergy LLC - 5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mark Fowler - Mark Fowler On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Mark Fowler	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Srinivas Kappagantula - Arevon Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Don Cribb - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE continues to be concerned that there is no requirement explicitly stating the GO shall inform the planning and operational entities, such as the Balancing Authority, Transmission Operator, or Reliability Coordinator of a Generator Cold Weather Constraint. Since the phrase “acceptable practices” in the Generator Cold Weather Constraint definition is vague and could lead to inconsistent application, Texas RE does not agree with increasing the review of the declaration from one year to five years. Generators should be reviewing their declarations annually to ensure all available information is up to date and usable.	
Likes 0	
Dislikes 0	
Response	

See the unofficial comment form for additional information: https://www.nerc.com/pa/Stand/Project202107ExtremeColdWeatherDL/2021-07_Unofficial_Comment_Form_AB%202%20EOP-012-2_011024.docx

4. Per the FERC directive to shorten the timeframe to implement freeze protection measures on existing units, the SDT proposes an implementation plan where all requirements of EOP-012-2 go into effect on the effective date of the standard except Requirement R3 which has a 12-month implementation time frame. The chart below is included to compare the EOP-012-1 and EOP-012-2 IPs for this requirement which requires GOs to have the capability to operate at the ECWT or a CAP written by the effective date of the requirement. After reviewing the comments on the previous posting, the team determined to not change the timeframe in the posted implementation plan for reasons explained in the Consideration of Comments. If you have any further comments, please provide them here.

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
NO. We agree with some comments provided by AES and Talen but are not going to restate each item specifically.	
Likes 0	
Dislikes 0	
Response	

David Rivera - New York Power Authority - 3	
Answer	No
Document Name	
Comment	
NYPA has concerns about the CAP timelines mentioned in the standard. Given the extended lead time for delivery, potential financial burden, and resource allocation issues, especially if CAP required for multiple units, NYPA recommends that the SDT consider providing more flexibility to utilities regarding CAP timelines.	
Likes 0	
Dislikes 0	
Response	

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	

While the timelines specified in R7, Parts 7.1.1 and 7.1.2, might be reasonable for the R1 re-calculations of ECWTs in the future, we are concerned that they may be unreasonable for the initial performance hurdle of R1/R3, particularly for entities that own a lot of applicable units. Even if an entity has the funding to implement the changes, there are a limited number of OEMs and design firms able to support the work, and they may be utilized by numerous GOs for such work. We suggest the Implementation Plan allow for existing units to be brought into initial compliance within six (6) years (10/1/2031), with percentage milestone completion targets for years 4 (30%), 5 (60%), and 6 (100%)..

Likes 0	
Dislikes 0	

Response

C. A. Campbell - LS Power Development, LLC - 5

Answer	No
Document Name	

Comment

LS Power Development supports NAGF comments. Additionally, as written entities have 12 months to develop a CAP from the implementation date, this would mean that all required assessments would have to be concluded prior to the implementation date (10/1/2024) in order to take full advantage of that 12 month timeframe. CAPs dedicated to winter weatherizations require coordination around existing scheduled outages, so preceeding assessments & resulting development may require a longer timeframe. Should entities rely on historical operations and an issue occurs within that 12-month period, then the timeframe would be even more restrictive. There are no carve-outs for scenarios deviating from existing assumptions.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

The SRC is concerned that the period allotted for implementation of freeze protection measures remains excessive due to the amount of time industry has already had to implement freeze protection measures. The SRC believes it is important for the standard to require implementation of freeze protection measures as quickly as reasonably possible and believes that a reduced timeframe for CAP implementation will help achieve this goal. However, the SRC recognizes that the standard also needs to account for the potential impacts of large generation fleets, complex freeze protection measure installation procedures, and limited outage windows in which corrective actions can be implemented. Therefore, the SRC recommends that language be added to R7.3 to allow entities necessary flexibility in implementing their CAPs should they encounter obstacles that prevent them from timely completing the CAP. Revised CAPS would be submitted to and approved by NERC and/or the relevant Regional Entity to ensure that a defined completion period is established. This language, paired with the shorter implementation timeframes in R7.1 that the SRC recommends below, strikes an appropriate balance between expeditious implementation of corrective actions and appropriate allowance for and oversight of the impacts of unpredictable real-world conditions.

In addition, the SRC continues to recommend that the drafting team further clarify the language regarding CAPs in Requirement R7. As proposed, R7 does not appear to include sufficient focus on CAP implementation. Additionally, the SRC reads Part 7.1.1 to require a GO to "[l]ist the action(s) which address(es) existing equipment or freeze protection measures" and to implement those within 24 calendar months, while Part 7.1.2 requires a GO to "[l]ist the action(s) which require(s) new equipment or freeze protection measures" and implement those within 48 calendar months.

However, because some corrective actions may address existing equipment and also require new measures, these categories are not necessarily mutually exclusive, and an ambiguity could therefore arise regarding the appropriate timeline that would apply in such a case. The SRC presumes that the CAP implementation timeline should depend on whether new equipment is required to be installed, and not on whether the CAP "addresses" existing equipment or measures. Regarding the timeline, new "measures" that don't require new equipment would not seem to require more than a year to complete, while new equipment should not require more than two years in the vast majority of cases. Therefore, the proposed 24- and 48-month timelines seem excessive.

The SRC suggests the following revised language for Requirement R7, Parts 7.1 and 7.3:

R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. Include a timetable for implementing the selected corrective action(s) that shall:

7.1.1 **(new subpart**) Subject to inclusion of documentation supporting declaration of a Generator Cold Weather Constraint, document the generator's best efforts to promptly implement all immediate and near term actions that it can undertake prior to the next upcoming winter season to winterize the generating unit(s) to operate at its calculated Extreme Cold Weather Temperature;

7.1.2 (in place of 7.1.1) Specify each corrective action that does not require the installation of new equipment but which cannot be implemented prior to the next upcoming winter season. Subject to inclusion of documentation supporting declaration of a Generator Cold Weather Constraint, such actions must be completed within 12 months of the development of the Corrective Action Plan;

7.1.3. (in place of 7.1.2) Specify each corrective action that requires the installation of new equipment. Subject to inclusion of documentation supporting declaration of a Generator Cold Weather Constraint, such actions must be completed within 24 months of the development of the Corrective Action Plan;

7.1.4. (formerly R7.1.3) List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

7.3 Update the Corrective Action Plan, with justification **and supporting documentation of the needed implementation time**, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1, **and report the update and associated justification and supporting documentation to NERC and/or the relevant Regional Entity for review and approval** . . .

Likes 0	
Dislikes 0	

Response

Don Cribb - Santee Cooper - 5, Group Name Santee Cooper

Answer	No
Document Name	

Comment

R7. Part 7.1.1 and Part 7.1.2 have hard deadlines for Corrective Action Plans. Part 7.1 should clearly indicate that these deadlines are superseded when an extension is justified by Part 7.3.

Likes 0	
Dislikes 0	

Response

Srinivas Kappagantula - Arevon Energy - 5

Answer	No
Document Name	

Comment

Arevon agrees with NAGF comments. The proposed timelines are likely sufficient for implementing repairs or new freeze protection measures on a single unit. However, CAPs are required to address other like units as well. Because that could increase the number of units that must be addressed, the timelines are not sufficient. We understand that FERC referenced TPL-007 as a model for the CAP timeline. We also understand that one plant maintenance manager agreed that this timeline was reasonable for a single unit. However, neither of those “recommendations” address multiple like units. To the extent that the standard requires the CAPs to address like units, the time to implement the CAP must address the need to budget, engineer, plan, schedule and implement corrections for more than one unit. If a CAP must address 10 units, a four-year time frame is not likely to be achievable. As currently structured, a GO will need to create one CAP that addresses the timeline and then create a “revised” CAP that is more realistic.

Likes 0	
Dislikes 0	

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer	No
Document Name	
Comment	

We do not agree with the proposed EOP-012-2 Implementation Plan timeframe for this requirement which requires GOs to have the capability to operate at the ECWT or a CAP written by the effective date of the requirement. This shortened timeframe will increase competition for vendor resources. This is a deviation from the FERC direction to NERC. FERC directed NERC to address concerns relating to the extensive period before generators must implement freeze protection measures or develop corrective action plans. This is not equivalent with the GOs having the capability to operate at the ECWT or a CAP written by the effective date of the requirement.

The major and necessary decrease in reliability risk is achieved through the mere implementation of freeze protection measures, which will eliminate the simultaneity of the generator cold weather events. Appropriate planning should ensure adequate reserve is available to replace the generating units subject to a cold weather event.

Likes 0	
Dislikes 0	
Response	

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

Answer	No
Document Name	
Comment	

For units with a low capacity factor (peaking generation) it is difficult to identify and implement design improvements that will increase cold weather reliability

Likes 0	
Dislikes 0	
Response	

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

Answer	No
Document Name	
Comment	

The proposed timeline are likely sufficient for implementing repairs or new freeze protection measures on a single unit. However, CAPs are required to address other like units as well. Because that could increase the number of units that must be addressed, the timelines are not sufficient. We understand that FERC referenced TPL-007 as a model for the CAP timeline. We also understand that one plant maintenance manager agreed that this timeline was reasonable for a single unit. However, neither of those “recommendations” address multiple like units. To the extent that the standard requires the CAPs to address like units, the time to implement the CAP must address the need to budget, engineer, plan, schedule and implement corrections for more than one unit. If a CAP must address 10 units, a four-year time frame is not likely to be achievable. As currently structured, a GO will need to create one CAP that addresses the timeline and then create a “revised” CAP that is more realistic.

Likes 0	
Dislikes 0	

Response

Lauren Giordano - Lauren Giordano On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; - Lauren Giordano

Answer	No
Document Name	

Comment

We agree with some comments provided by AES and Talen but are not going to restate each item specifically.

Likes 0	
Dislikes 0	

Response

Megan Melham - Decatur Energy Center LLC - 5

Answer	No
Document Name	

Comment

The proposed timeline are likely sufficient for implementing repairs or new freeze protection measures on a single unit. However, CAPs are required to address other like units as well. Because that could increase the number of units that must be addressed, the timelines are not sufficient. We understand that FERC referenced TPL-007 as a model for the CAP timeline. We also understand that one plant maintenance manager agreed that this timeline was reasonable for a single unit. However, neither of those “recommendations” address multiple like units. To the extent that the standard requires the CAPs to address like units, the time to implement the CAP must address the need to budget, engineer, plan, schedule and implement corrections for more than one unit. If a CAP must address 10 units, a four-year time frame is not likely to be achievable. As currently structured, a GO will need to create one CAP that addresses the timeline and then create a “revised” CAP that is more realistic.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES Clean Energy supports NAGF's comments. Depending on the findings from R6.2, the CAP could involve multiple units. For an IPP that operates across multiple regions, the time needed to develop O&M budget, issue RFPs for addressing the action items listed in the CAP and completing the work can be longer than the 48 months under R7.1.2. This does not even include supply chain issues if there are only limited OEMs able to provide the equipment as well as capable contractors to perform installation of the equipment. CAP completion should be contingent upon technical feasibility of the equipment and available replacement.	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree with the new dates and recommends remaining with EOP-012-1 original dates.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
We suggest that Requirement R3 should have a 24-month implementation time frame. For generating units in commercial operation, a 12-month implementation time frame is not enough.	
Likes 0	
Dislikes 0	

Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation supports NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
The proposed deadlines may be impractical for companies with numerous units to address, particularly if EOP-012 creates a continent-wide surge in winterization activity that reduces the availability of qualified contractors and materials. Deadlines from the date of the GCWRE are also needed for generation units that were compliant on 10/1/2024 but froze-up at a later date.	
Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
“See comments submitted by the Edison Electric Institute” EEI supports the proposed timeline.	
Likes 0	

Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
NV Energy is supportive of timeframes as posted.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the proposed timeline.	
Likes 0	
Dislikes 0	
Response	
Mark Fowler - Mark Fowler On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Mark Fowler	
Answer	Yes
Document Name	
Comment	
See our comments in Q2.	
Likes 0	
Dislikes 0	
Response	

Colby Galloway - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern agrees with EEI and supports the proposed implementation timeframe of EOP-012-2.	
Likes 0	
Dislikes 0	
Response	
Casey Perry - PNM Resources - 1,3 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
PNM and TNMP agree with new implementation dates in the implementation plan.	
Likes 0	
Dislikes 0	
Response	
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 does not have any further comments on the implementation time frame.	
Likes 0	
Dislikes 0	
Response	
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	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Avista, EEI supports the proposed timeline.	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
MRO NSRF is supportive of timeframes as posted.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	

Comment	
AZPS agrees with this timeframe.	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
There are still concerns from a budgetary, labor and/or parts constraints to obtain the objective.	
Likes 0	
Dislikes 0	
Response	
Dane Rogers - Dane Rogers On Behalf of: Donald Hargrove, OGE Energy - Oklahoma Gas and Electric Co., 3, 1, 5, 6; - Dane Rogers, Group Name OG&E	
Answer	Yes
Document Name	
Comment	
OG&E supports comments submitted by MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	Yes
Document Name	
Comment	

AECI supports comments submitted by ACES.	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy supports the proposed timeline.	
Likes 0	
Dislikes 0	
Response	
James Keele - Entergy - 3	
Answer	Yes
Document Name	
Comment	
Effective Date	

10/1/2024

10/1/2024

Have Capability to Operate at ECWT or CAP Developed

4/1/2028

10/1/2025

CAP Completed

no end date specified

10/1/2027 (R7.1.1) or 10/1/2029 (R7.1.2)

Likes 0	
Dislikes 0	

Response

Alison MacKellar - Constellation - 5

Answer	Yes
Document Name	

Comment

Constellation has no additional comments

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 6

Answer	Yes
Document Name	

Comment

Constellation has no additional comments.

Kimberly Turco on behalf on Constellation segements 5 and 6	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Rhonda Jones - Invenergy LLC - 5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tracy MacNicoll - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laura Hankins - Laura Hankins On Behalf of: Matt Lewis, Lower Colorado River Authority, 5, 1; - Laura Hankins	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Wei Shao, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rebecca Zahler - Public Utility District No. 1 of Chelan County - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	

Response

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring

Answer	
Document Name	

Comment

Same comments regarding consideration.

Existing units applicability is covered. New units applicability dates are not captured effectively and changes to the Implementation Plan should be considered to mitigate this reliability gap. The phrase “as determined in Requirement R1” is used extensively but the Initial Performance for newly applicable generating unit(s) is not addressed in the Implementation Plan thus giving new units “five calendar years” to develop an ECWT.

Likes 0	
Dislikes 0	

Response

5. The SDT proposes that the modifications in EOP-012-2 meet the key recommendations in The Report as well as the directives in the FERC order 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.

Donald Lock - Talen Generation, LLC - 5

Answer	No
Document Name	

Comment

Ref. our, “Do it right the first time,” comment for Question 1 above, the EOP-012-2 new unit of the 0.2 percentile dry bulb temperature (for a look-back to 1/1/2000) plus a 20 mph wind criterion has no scientific basis, and for our own units would not protect against a repetition of the Polar Vortex of 2014 or Winter Storm Uri.

New units should be winterized to the ASHRAE 50-year recurrence dry bulb temperature plus a 20 mph wind. This should be a once-and-done exercise, not something requiring periodic adjustment and potentially having to tear-out everything originally done for EOP-012 and start over.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

AECI supports comments submitted by ACES.

Likes 0	
Dislikes 0	

Response

Richard Vendetti - NextEra Energy - 5

Answer	No
Document Name	

Comment

EOP-012-2 as it stands, requires implementation of “freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature; or Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature”.

It will be extremely difficult for wind turbine generators to comply with this standard and always guarantee reliable operation if considering temperature only as the criteria. This is due to the formation of ice on blades. This phenomenon does not depend solely on ambient temperature but other factors such as water content in the air, altitude & sky conditions among others. It is known from operational experience that if certain ambient conditions are present, the wind turbine generators will accrete substantial amount of ice on blades even if ambient temperature is within the design limit of the wind turbine generator. The formation of ice on blades can be so extreme that it would lead to the inevitable shutdown of the wind turbine generator. We would like to encourage the Standard Drafting Team to include required limits for all the variables which play a role on the fundamental blade icing physics. That would help Generator Owners to consider as freeze protection measures technologies which could help prevent ice accretion

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Our generating units are operating below 32 degrees Fahrenheit (zero degrees Celsius) for more than half of the time in a year. Cold weather operation in winter is our normal operation. It significantly increases compliance cost if documentation is required for cold weather preparedness plans because they are embedded in the well developed and practiced maintenance and operation procedures. Even though the proposed M4 includes the existing operating procedures, it is still an undue administrative burden to extract the cold weather-related part from the existing procedures. There is a risk of reducing reliability if the routines are broken when trying to reorganize the maintenance and operation procedures. Specific cold weather-related training increases cost for the normal operating duties in our region. This is not a proper way to increase reliability.

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer	No
Document Name	

Comment

Reclamation does not agree. As annotated in previous comments, Reclamation facilities have been operating in “extreme cold weather” since inception, and this standard burdens the facilities with excessive requirements and unnecessary administrative actions.

Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	
NRG believes that this version is an improvement over previous versions of this draft standard. However, implementing EOP-011 has proven to be a large undertaking with equally large associated costs. The transition to EOP-012 with the costs of additional equipment and administrative overhead to meet the requirements does not appear to be cost-effective for generators.	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
NRG believes that this version is an improvement over previous versions of this draft standard. However, implementing EOP-011 has proven to be a large undertaking with equally large associated costs. The transition to EOP-012 with the costs of additional equipment and administrative overhead to meet the requirements does not appear to be cost-effective for generators.	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
Refer to AES Clean Energy’s comments to Question 4.	

Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	

AEPC has signed on to ACES comments:

We do not believe that either following changes are a cost-effective solution:

- The inclusion of “impacts of freezing precipitation on equipment” in the definition of “Generator Cold Weather Reliability Event”
  - By including the impacts of freezing precipitation on equipment, the proposed revision could potentially cause the industry to adopt an iterative approach to compliance. Furthermore, modifying the definition in such a manner could cause the GO to be at risk of non-compliance with Requirement R6 even when fully compliant with R2 or R3 as applicable.
    - As written, Requirements R2 and R3 require the GO to implement freeze protection measures based on the Extreme Cold Weather Temperature; however, the GO is not required to address the impacts of freezing precipitation on equipment under either Requirement.
- The modification to Requirement R4 Part 4.4 changing “may include” to “includes”
  - This seemingly minor change has enormous compliance consequences for the GO.
    - By requiring the GO to document freeze protection measures used to reduce the cooling effects of wind and the effects of freezing precipitation, the proposed change will force the GO to evaluate and possibly implement such measures. This is further exacerbated by the fact that Requirements R2 and R3 only require the GO to implement freeze protection measures based on temperature alone.
      - We believe such an evaluation and subsequent implementation is cost prohibitive and an undue compliance burden for the GO.
    - We recommend reverting to the previous language for Requirement R4 Part 4.4.

Likes 0	
Dislikes 0	
Response	
Megan Melham - Decatur Energy Center LLC - 5	
Answer	No
Document Name	
Comment	

Please see the response to question 4 for the concerns to address improvements for a cost-effective approach.

Likes 0	
Dislikes 0	

Response

Lauren Giordano - Lauren Giordano On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; - Lauren Giordano

Answer	No
Document Name	

Comment

The SDT has not provided a cost estimate nor tangible reliability indices improvements said modifications are projected to provide. No standard should be allowed if a cost/benefit analysis is not provided by the SDT. SDT frequently asks this question but never provides a cost/benefit justification. SDTs and others, usually simply says there is a reliability gap, or a risk, but does not provide estimated, tangible, reliability indices improvement numbers or a cost estimate to fill the alleged gap or risk. This proposal appears to be another costly administrative process with no continent wide tangible reliability benefit.

Likes 0	
Dislikes 0	

Response

Rhonda Jones - Invenergy LLC - 5,6

Answer	No
Document Name	

Comment

Invenergy believes the SDT improved upon the previous draft, but, absent a comprehensive cost-benefit analysis, is not in a position to comment on the cost-effectiveness of the modifications in EOP-012-2

Likes 0	
Dislikes 0	

Response

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

Answer	No

Document Name	
Comment	
Please see the NAGF response to question 4 for the concerns to address improving the cost -effective approach.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
The requirement to implement additional freeze protection measures at a site with a low capacity factor is not likely to be “cost effective”. The capital investments necessary to improve reliability of generating units that were not designed to operate at a lower temperature will drive up the cost of electricity for everyone.	
Likes 0	
Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	
There is no reliability gap for the Canadian Entities, as these entities are successfully operating in a Cold Climate through the associated extremes, with the aid of their current operating instructions, procedures, training, and specific station design. There should be an **exception in the applicable Facilities, to exclude the Canadian BES generating units**, as a cost-effective approach, without the undue compliance burden, towards the reliable operation of these facilities.	
Likes 0	
Dislikes 0	
Response	
Srinivas Kappagantula - Arevon Energy - 5	

Answer	No
Document Name	
Comment	
Please see response to question 4 for the concerns to address improving the cost -effective approach.	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
Invenergy believes the SDT improved upon the previous draft, but, absent a comprehensive cost-benefit analysis, is not in a position to comment on the cost-effectiveness of the modifications in EOP-012-2.	
Likes 0	
Dislikes 0	
Response	
Don Cribb - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	
Comment	
Part 7.1 should clearly indicate that deadlines are superseded when an extension is justified by Part 7.3. There are instances where implementing corrective action plans at a date later than prescribed by 7.1.1 and 7.1.2 would not impose additional reliability risks and could provide substantial cost savings for regulated entities.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	

Answer	No
Document Name	

Comment

We do not believe that either following changes are a cost-effective solution:

- The inclusion of “impacts of freezing precipitation on equipment” in the definition of “Generator Cold Weather Reliability Event”
  - By including the impacts of freezing precipitation on equipment, the proposed revision could potentially cause the industry to adopt an iterative approach to compliance. Furthermore, modifying the definition in such a manner could cause the GO to be at risk of non-compliance with Requirement R6 even when fully compliant with R2 or R3 as applicable.
    - As written, Requirements R2 and R3 require the GO to implement freeze protection measures based on the Extreme Cold Weather Temperature; however, the GO is not required to address the impacts of freezing precipitation on equipment under either Requirement.
- The modification to Requirement R4 Part 4.4 changing “may include” to “includes”
  - This seemingly minor change has enormous compliance consequences for the GO.
    - By requiring the GO to document freeze protection measures used to reduce the cooling effects of wind and the effects of freezing precipitation, the proposed change will force the GO to evaluate and possibly implement such measures. This is further exacerbated by the fact that Requirements R2 and R3 only require the GO to implement freeze protection measures based on temperature alone.
      - We believe such an evaluation and subsequent implementation is cost prohibitive and an undue compliance burden for the GO.
    - We recommend reverting to the previous language for Requirement R4 Part 4.4.

Likes 0	
Dislikes 0	

Response

C. A. Campbell - LS Power Development, LLC - 5

Answer	No
Document Name	

Comment

LS Power Development supports NAGF comments & position for this question. There are unaddressed concerns relating to cost-effectiveness.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment
The requirements may not directly align with other regulatory requirements including NRC, which may increase costs due to redundancy while accomplishing similar goals.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	

Comment
Constellation has no additional comments. Kimberly Turco on behalf on Constellation segements 5 and 6

Likes 0	
Dislikes 0	

Response

Alison MacKellar - Constellation - 5	
Answer	Yes
Document Name	

Comment
Constellation has no additional comments Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

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

Answer	Yes
Document Name	
Comment	
FirstEnergy agrees with the proposed approach toward EOP-012-2.	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Avista agrees with the EEI comments. EEI agrees that EOP-012-2 meets the key recommendations in the Report	
Likes 0	
Dislikes 0	
Response	
Dane Rogers - Dane Rogers On Behalf of: Donald Hargrove, OGE Energy - Oklahoma Gas and Electric Co., 3, 1, 5, 6; - Dane Rogers, Group Name OG&E	
Answer	Yes
Document Name	

Comment	
OG&E supports comments submitted by MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
MRO NSRF has no comments regarding the cost effectiveness of the proposed modifications.	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Avista agrees with the EEI comments. EEI agrees that EOP-012-2 meets the key recommendations in the Report.	
Likes 0	
Dislikes 0	
Response	
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	
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 with the modifications.	
Likes 0	
Dislikes 0	
Response	
Casey Perry - PNM Resources - 1,3 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
PNM and TNMP agree that cold weather implementations can be enacted in a cost-effective manner.	
Likes 0	
Dislikes 0	
Response	
Colby Galloway - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	

Southern agrees with EEI and believes the requirements in EOP-012-2 are reasonable and provide for the most cost-effective manner to achieve the desired results.

Likes 0	
Dislikes 0	

Response

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

Answer	Yes
Document Name	

Comment

EEI agrees that EOP-012-2 meets the key recommendations in the Report.

Likes 0	
Dislikes 0	

Response

Selene Willis - Edison International - Southern California Edison Company - 1,3,5,6

Answer	Yes
Document Name	

Comment

“See comments submitted by the Edison Electric Institute”

EEI agrees that EOP-012-2 meets the key recommendations in the Report.

Likes 0	
Dislikes 0	

Response

Rebecca Zahler - Public Utility District No. 1 of Chelan County - 5

Answer	Yes
Document Name	

Comment

Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
James Keele - Entergy - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Wei Shao, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laura Hankins - Laura Hankins On Behalf of: Matt Lewis, Lower Colorado River Authority, 5, 1; - Laura Hankins	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Tracy MacNicoll - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	
Document Name	
Comment	
AZPS will not comment on cost effectiveness of this directive.	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	
Document Name	
Comment	
Black Hills Corporation will not comment on cost-effectiveness.	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	

Document Name	
Comment	
WECC will leave commenting on cost effectiveness to the registered entities that must comply with the proposed standard.	
Likes 0	
Dislikes 0	
Response	
Mark Fowler - Mark Fowler On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Mark Fowler	
Answer	
Document Name	
Comment	
Ameren will not comment on the cost effectiveness of the project.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	
NV Energy has no comments regarding the cost effectiveness of the proposed modifications.	
Likes 0	
Dislikes 0	
Response	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	
Document Name	
Comment	

NO. The SDT has not provided a cost estimate nor tangible reliability indices improvements said modifications are projected to provide. No standard should be allowed if a cost/benefit analysis is not provided by the SDT. SDT frequently asks this question but never provides a cost/benefit justification. SDTs and others, usually simply says there is a reliability gap, or a risk, but does not provide estimated tangible reliability indices improvement numbers or a cost estimate to fill the alleged gap or risk. This proposal appears to be another costly administrative process with no continent wide tangible reliability benefit.

Likes 0	
Dislikes 0	

Response

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

Marty Hostler - Northern California Power Agency - 3,4,5,6

Answer	
Document Name	

Comment

In FERC and NERC's joint 2017 Cold Weather report they suggested a three prong approach to address cold weather reliability issues: guidance, standard modifications, and market rules modifications. To date only guidance and standard modifications have been implemented. We suggest BA's, RTO's, and TO's which have experienced the recent cold weather events modify their market rules and interconnection requirements, which they can do without NERC, if they want to improve reliability in their areas.

It is also concerning that some people have been pressing Industry to accept this version, or else NERC will force it, or something else. There is no evidence that these modification will improve reliability and they certainly are not cost effective. It appears standards are being changed, or created, just to create the appearance that something is being done. We need tangible evidence that standards being made or changed will improve reliability, the degree of reliability improvement, and the cost/benefit to make said changes.

Likes 0	
Dislikes 0	

Response

Romel Aquino - Edison International - Southern California Edison Company - 1,3,5,6

Answer	
Document Name	

Comment

See comments submitted by the Edison Electric Institute

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

It may be beneficial to provide a way to exclude some operating limitations under R1, Part 1.2.1 for units that are not going to be applicable. For example, fuel supply and inventory concerns for hydro, wind, or solar generation.

EOP-012-1 Requirements R3, R5, R6 and R7 are currently scheduled to become effective 10/1/2024. The proposed Implementation Plan for EOP-012-2 has it becoming effective "on the later of: (1) October 1, 2024; or (2) the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority". This leaves the industry with a good bit of uncertainty in how to prepare for the mandatory and enforceable version of EOP-012 that will be effective in less than 10 months from now. Since EOP-012-1 Requirements R3, R5, R6 and R7 are the current nearest "known", we request the drafting team consider adding some additional language in the EOP-012-2 Implementation Plan to address a scenario where the applicable governmental authority's order approving the EOP-012-2 standard occurs at any time prior to October 1, 2024. Under this scenario, we suggest that EOP-012-1 Requirements R3, R5, R6 and R7 not be enforced. Possible language to consider:

Retirement Date

Standard EOP-012-1

Reliability Standard EOP-012-1 shall be retired immediately prior to the effective date of Reliability Standard EOP-012-2 in the particular jurisdiction in which the revised standard is becoming effective. ***Should the applicable governmental authority's order approving EOP-012-2 be issued prior to October 1, 2024, EOP-012-1 will not have an effective period.***

In other words, if the effective date of EOP-012-2 should slide to January 1, 2025 (approval order issued between 7/1/24 and 9/30/24), don't create a three month enforcement window for EOP-012-1.

Likes 0	
Dislikes 0	

Response

C. A. Campbell - LS Power Development, LLC - 5

Answer	
Document Name	

Comment

The Standard Drafting Team has done an exceptional job with trying to meet the demands of so many positions revolving around industry participant contraints and needs. We are sensitive to the challenge of meeting FERC directives in this project and appreciate the efforts and intent to improve reliablity during the winter season. LS Power Development agrees with the NAGF comments and requests consideration of further revisions.

Likes 0	
Dislikes 0	

Response

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

Answer	

Document Name	
Comment	
Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	
Document Name	
Comment	

The SRC provides the following additional comments:

Revise the applicability of the standard to better match FERC's directives - The SRC agrees with the proposed revisions to the Applicability section of the Standard but remains concerned with the existing generating unit exemptions contained in Requirements R2, R3, and R6 and related footnotes, as these exemptions appear to allow unit(s) needed for reliable operation to be exempt from meeting the Requirements to implement freeze protection measures and develop a CAP as needed. In order to meet the directive in paragraph 58 of FERC's February 16, 2023 Order that the standard should "capture[] all [BES] generation resources needed for reliable operation and exclude[] only those generation resources not relied upon during freezing conditions," the SRC recommends the following revisions:

-- Replace "self-commits or that is required to operate" with "that may be committed to operate" in Requirements R2, R3, and R6.

-- Remove or revise footnotes 1, 2, and 4.

--- If the footnotes are revised instead of removed, the SRC proposes the following language: *Generating unit(s) that were intentionally designed for limited operation in the summer season, but may operate on a "best efforts" basis during the winter season when needed in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.*

Add timing specificity for required inspections & maintenance - The SRC recommends that Requirement R4, Part 4.5 be revised to require inspections and maintenance of all units on "at least an annual basis, and always within three months of the upcoming winter season." This request is due to past and current findings in which the GO/GOP did not initiate inspection and maintenance early enough or prior to winter and was consequently not timely prepared for cold weather operations.

Revise R1.1.1 - The SRC notes that R1.1.1 requires development of a CAP within 6 months of the recalculation of the ECWT if new corrective actions are needed to provide the required operational capability under Requirement R3, but does not contain a corresponding requirement for the operational capability required under Requirement R2. The SRC believe that it is important for R1.1.1 to address the impact of a recalculated ECWT on both

Requirement R2 and Requirement R3; the SRC therefore recommends that R1.1.1 be revised to require creation of a CAP if new corrective actions are needed to provide the required operational capability under both R2 and R3.

Combine Requirements R2 and R3 - The SRC also disagrees that the enhanced cold weather requirements that are contained within Requirement R2 should be limited to units that enter commercial operation on or after October 1, 2027. Requirements R2 and R3 should be combined into a single Requirement that applies the enhanced cold weather requirements currently contained within Requirement R2 to all units and only allows CAPs for units that achieved commercial operations before October 1, 2027. The GCWC declaration process and the Corrective Action Plan process within EOP-012 provide sufficient accommodation for existing units. Adopting the SRC's proposal would require more thorough weatherization of generation units, resulting in a more reliable and performant BES during extreme cold weather conditions.

Ensure sufficient data provision to BAs - Phase II of the Cold Weather Recommendations in FERC's report on Winter Storm Uri indicated in its discussion of TOP-003-5 in Key Recommendation 1g that the Reliability Standards should be revised to provide greater specificity about the relative roles of the Generator Owners, Generator Operators, and Balancing Authorities in determining the generating unit capacity that can be relied upon during "local forecasted cold weather." It is currently unclear to the SRC whether the five-year review period for GCWCs under EOP-012-2 Requirement R8 places GCWC information outside the operations planning time horizon in TOP-003-5 Requirement R2 and therefore out of scope for a valid TOP-003-5 data specification. The SRC requests that the drafting team provide clarification on this topic.

Likes 0	
Dislikes 0	

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer	
Document Name	

Comment

NV Energy appreciates the hard work that the SDT has put into this drafting process. Their response to industry comments is a testament to the success of the Standard Drafting Process and NV Energy supports the approval of this draft based solely on the merits of the proposed language.

However, NV Energy is concerned about the addition of R1.2.1.3. We feel that this addition increases documentation burden but does not add any reliability value. Additionally, this issue would be handled by the CAP process if there are startup issues that are classified as Generator Cold Weather Reliability Events.

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

1. BC Hydro noted that Requirement R1 Part 1.1.1. includes only Requirement R3 in relation to CAP development 6-month timeline. Without referencing R2 as well, generating units with a commercial operation date on or after October 1, 2027 would not be covered by this 6-month CAP development provision. Previous drafts included both R2 and R3 in this Part 1.1.1, and per the November 16, 2023 webinar this appeared to be an oversight that was to be corrected.

2. BC Hydro thanks the drafting team for their response to our suggestion on the R6 timeline in the previous draft. While we understand that there is no expectation to complete the CAP by July 1, as "freezing precipitation" may result in EOP-012 events well into the Spring calendar months (March, April, or even May in extreme conditions) in British Columbia, which – given the July 1 deadline – will add considerable burden in timely completion of the CAP development in the context of Requirement R6.

BC Hydro recommends that the wording of the Requirement R6 be changed to allow up to 150 calendar days in cases where the July 1 deadline may result in considerably shorter than 150-day timeframe to develop a CAP for events later in the year.

Likes 0	
Dislikes 0	

Response

Don Cribb - Santee Cooper - 5, Group Name Santee Cooper

Answer	
Document Name	

Comment

Santee Cooper agrees with the NAGF comments, but has additional comments below:

In the Standard:

R7. Part 7.1.1 and Part 7.1.2 have hard deadlines for Corrective Action Plans. Part 7.1 should clearly indicate that these deadlines are superseded when an extension is justified by Part 7.3.

R7. Part 7.1.4 is still listed and discussed in the Rationale in several places even though it has been removed from the Standard.

In the Tech Rationale:

R4. General Considerations states… "and the GO is required to annually train personnel on its (the plan's) requirements." Any requirement for content of training should be explicitly stated in the Standard.

R5. Technical Rationale is more prescriptive regarding the personnel required to be trained. Requirement R5 requires training for personnel responsible for implementation of the plan which does not necessarily include all individuals who conduct inspections, perform maintenance, and operations, but can be limited to supervision for the overall implementation of the Plan.

R5 in the Technical Rationale also specifies training contents not listed in the requirement. Any intended training contents should be explicitly stated in Requirement R5.

R7. The explanation states that the Corrective Action Plan requirements were modeled after TPL-007. TPL-007 allows for 2 years for non-hardware mitigations. This would be equivalent to a setpoint change or a procedural change and is very appropriate. Hardware related mitigations in TPL-007 are granted 4 years for completion. If TPL-007 Corrective Action Plans were adopted by EOP-012, corrective actions requiring existing hardware replacements would be granted 48 months for completion.

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

While the drafting team has made its intent clear in the Technical Rationale document regarding extreme cold weather startups, Dominion Energy remains concerned that the current language of the standard fails to include realistic start-up assumptions for older generators or generators with certain fuel types prejudicially by imposing what may be unreasonable start-up time frames during extreme cold weather, based on the facts and circumstances at that time. Many generators are designed to operate in extreme cold weather but not to startup on short notice during the same conditions. A generator may have a typical startup time for expected conditions but have an extended startup time the extreme cold weather temperature was not designed to start up at. There is no way to test a generator(s) startup period in an extreme weather condition until the situation occurs. The standard should account for this and specify that generators should only be required to communicate these abnormal startup issues and changes to expected startup periods rather than be required to perform a CAP to retrofit a facility to be able to startup at its extreme cold weather temperature.

Likes 0	
Dislikes 0	

Response

Colin Chilcoat - Invenergy LLC - 6

Answer	
Document Name	

Comment

Revise M8 to reflect the revised constraint declaration review cadence of at least every five calendar years.

Please validate our understanding that Generator Cold Weather Reliability Events for which the apparent cause is due to freezing of equipment subject to a Generator Cold Weather Constraint do not require Corrective Action Plans. For example, if a Generator Owner has declared a Generator Cold Weather Constraint for its wind turbine blades, would the Generator Owner need to develop a Corrective Action Plan for each Generator Cold Weather Reliability Event caused by blade icing?

Likes 0	

Dislikes 0	

Response

Srinivas Kappagantula - Arevon Energy - 5	
Answer	
Document Name	

Comment
Arevon agrees with the NAGF comments. 1. The SDT has improved the proposed standard significantly. There are still areas that can be improved upon, and the NAGF hopes to see these improvements in the near future. Assuming this iteration is approved by the ballot body, the NAGF would like to see the SDT continue to address areas of concern, specifically improving the language around the training requirements, further refining the ECWT calculation to ensure it is sustainable over time, improve areas like 1.2 to better address the differences in generator types (there is no reason for a wind or solar facility to include language in their cold weather plan about fuel supply concerns or fuel switching capabilities, but as written, auditors are suggesting PNCs if the plan does not address these two items). These modifications should be made without the time constraints under which EOP-012-1 and EOP-012-2 were developed to allow industry to develop a standard that can withstand the test of time. 2. New sub-requirement: R1.2.1.3 Start-up issues: The NAGF requests the drafting team and NERC to consider including the same requirement in IRO-010 or TOP-003. Currently, TOP-003-5 that became effective on 4/1/2023 has no sub-requirement for BA and TOP to require similar data from GO/GOP. Therefore, addition of this sub-requirement in EOP-012-2 will lead to administrative work that may have no effect on reliability if it's not being requested or utilized. Although it is specified in the new TOP-002-5 R8 where it applies to the BA only, there is no corresponding requirement for the BA in TOP-003. It is only assumed that BA will need the data and list it in their data specification. 3. Technical Rational Document enhancements: a. The NAGF recommends that the drafting team include examples in Technical Rational regarding "Start-up issues" and differentiate between synchronous generators and IBRs. b. Generator Cold Weather Critical Component – the NAGF notes that with the exclusion language added for any component and/or system located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32F, it is unclear whether this applies to containers for inverters and battery energy storage systems which are normally temperature controlled via a HVAC system. We recommend the drafting team provide further details on what is considered "permanent building".

Likes 0	
Dislikes 0	

Response

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

Comment

OPG supports the Hydro Quebec comment: “While we appreciate the great efforts the SDT has made to improve the proposed standard, there are still areas that can be improved on, specifically in regard to the applicability section to better address the differences in generator types and the training requirements. These modifications should be made without the time constraints under which EOP-012-1 and EOP-012-2 were developed to allow industry to develop a standard that can withstand the test of time.”

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

See NAGF comments. We would like to see additional changes to EOP-012 to address language that could cause inconsistency in approach.

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

The NAGF provides the following additional comments for consideration:

1. The SDT has improved the proposed standard significantly. There are still areas that can be improved upon, and the NAGF hopes to see these improvements in the near future. Assuming this iteration is approved by the ballot body, the NAGF would like to see the SDT continue to address areas of concern, specifically improving the language around the training requirements, further refining the ECWT calculation to ensure it is sustainable over time, improve areas like 1.2 to better address the differences in generator types (there is no reason for a wind or solar facility to include language in their cold weather plan about fuel supply concerns or fuel switching capabilities, but as written, auditors are suggesting PNCs if the plan does not address these two items). These modifications should be made without the time constraints under which EOP-012-1 and EOP-012-2 were developed to allow industry to develop a standard that can withstand the test of time.

2. New sub-requirement: R1.2.1.3 Start-up issues:

The NAGF requests the drafting team and NERC to consider including the same requirement in IRO-010 or TOP-003. Currently, TOP-003-5 that became effective on 4/1/2023 has no sub-requirement for BA and TOP to require similar data from GO/GOP. Therefore, addition of this sub-requirement in EOP-012-2 will lead to administrative work that may have no effect on reliability if it’s not being requested or utilized. Although it is

specified in the new TOP-002-5 R8 where it applies to the BA only, there is no corresponding requirement for the BA in TOP-003. It is only assumed that BA will need the data and list it in their data specification.

3. Technical Rational Document enhancements:

a. The NAGF recommends that the drafting team include examples in Technical Rational regarding “Start-up issues” and differentiate between synchronous generators and IBRs.

b. Generator Cold Weather Critical Component – the NAGF notes that with the exclusion language added for any component and/or system located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32F, it is unclear whether this applies to containers for inverters and battery energy storage systems which are normally temperature controlled via a HVAC system. We recommend the drafting team provide further details on what is considered “permanent building”.

Likes 0	
Dislikes 0	

Response

Mark Fowler - Mark Fowler On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Mark Fowler

Answer	
Document Name	

Comment

Ameren believes the 20mph wind requirement is not practical.

Likes 0	
Dislikes 0	

Response

Rhonda Jones - Invenergy LLC - 5,6

Answer	
Document Name	

Comment

- Revise M8 to reflect the revised constraint declaration review cadence of at least every five calendar years.
- Please validate our understanding that Generator Cold Weather Reliability Events for which the apparent cause is due to freezing of equipment subject to a Generator Cold Weather Constraint do not require Corrective Action Plans. For example, if a Generator Owner has declared a Generator Cold Weather Constraint for its wind turbine blades, would the Generator Owner need to develop a Corrective Action Plan for each Generator Cold Weather Reliability Event caused by blade icing?

Likes 0	

Dislikes 0	

Response

Lauren Giordano - Lauren Giordano On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; - Lauren Giordano	
Answer	
Document Name	

Comment
In FERC and NERC's joint 2017 Cold Weather report they suggested a three prong approach to address cold weather reliability issues: guidance, standard modifications, and market rules modifications. To date only guidance and standard modifications have been implemented. We suggest BA's, RTO's, and TO's which have experienced the recent cold weather events modify their market rules and interconnection requirements, which they can do without NERC, if they want to improve reliability in their areas.

Likes 0	
Dislikes 0	

Response

Colby Galloway - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	

Comment
Southern wishes to thank the SDT for their efforts to provide a reasonable and cost-effective standard for the industry that is broad enough to encompass a variety of climatic conditions and generator types.

Likes 0	
Dislikes 0	

Response

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	

Comment
The examples of possible Generator Cold Weather Constraints within the Technical Rationale do not support the proposed language changes for the definition of Generator Cold Weather Constraint. The examples, if provided at all in a Technical Rationale versus an Implementation Guidance document, should be updated to clearly reflect the proposed language.

Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	
Document Name	
Comment	
NPCC RSC supports this draft and thank you for all your hard work.	
Likes 0	
Dislikes 0	
Response	
Casey Perry - PNM Resources - 1,3 - WECC,Texas RE	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Laura Hankins - Laura Hankins On Behalf of: Matt Lewis, Lower Colorado River Authority, 5, 1; - Laura Hankins	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	

Response	
Junji Yamaguchi - Hydro-Quebec (HQ) - 5	
Answer	
Document Name	
Comment	
While we appreciate the great efforts the SDT has made to improve the proposed standard, there are still areas that can be improved on, specifically in regard to the applicability section to better address the differences in generator types and the training requirements. These modifications should be made without the time constraints under which EOP-012-1 and EOP-012-2 were developed to allow industry to develop a standard that can withstand the test of time.	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Quebec (HQ) - 1	
Answer	
Document Name	
Comment	
While we appreciate the great efforts the SDT has made to improve the proposed standard, there are still areas that can be improved on, specifically in regard to the applicability section to better address the differences in generator types and the training requirements. These modifications should be made without the time constraints under which EOP-012-1 and EOP-012-2 were developed to allow industry to develop a standard that can withstand the test of time.	
Likes 1	Ontario Power Generation Inc., 5, Chitescu Constantin
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	
Document Name	
Comment	
Minnesota Power turbines are designed with the cold weather package, which allows for operation down to -22 degrees Fahrenheit, though Extreme Cold Weather Temperatures in our region are less than that. We are not aware of any manufacturers that are offering options to allow for operation below this temperature, nor any new turbines being built with the capability to operate below this level. Deviating from manufacturer recommendations	

would void warranties, creating a significant financial and reliability risk for the turbines. It is our understanding that a Cold Weather Constraint may be applicable in this situation, since other cold weather packages are “not broadly implemented at generating units that comparable unit types in regions that experience similar winter climate conditions…” However, the Technical Rationale and Justification for EOP-012-2 states that “A declaration that no further corrective actions will be taken is expected to be used sparingly.” “Sparingly” seems to be an understated term, since this may be a common declaration for turbines that are operating in extreme climates.

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

Thank you for the opportunity to comment.

Likes 0	
Dislikes 0	

Response

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 recommends the SDT add the R2 Footnote 1 and R3 Footnote 2 (exemption language for operating below 32) to be applicable to R5. If the generator is exempt per the footnote, and therefore R2 and R3 are not applicable, what would be the training objective? It is imperative to ensure training is applicable to ensure focus of personnel and resources on highest priorities.

It is for this reason PG&E is voting NEGATIVE on the Standard ballot.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5	
Answer	
Document Name	
Comment	

AES Clean Energy supports NAGF's comments. As mentioned in the response to Question 1, AES Clean Energy strongly recommends that the ERO develop an implementation guidance or a CMEP Practice Guide in collaboration with industry, particularly on the interpretations of each requirement as applicable to generator types. Ideally, this should be done by the proposed effective date of the standard to avoid inconsistent interpretation issues that may arise during CMEP engagements with industry after the effective date of EOP-012-2.

Additional comments:

- New sub-requirement: R1.2.1.3 Start-up issues
  - With the addition of new sub-requirements, will NERC consider including the same requirement in IRO-010 or TOP-003 as well? Currently, based on TOP-003-5 that became effective on 4/1/2023, there is no similar sub-requirement for BA and TOP to require similar data from GO/GOP. Therefore, addition of this sub-requirement in EOP-012-2 will lead to administrative work that may have no effect on reliability if it's not being requested or utilized. Although it is specified in the new TOP-002-5 R8 where it applies to the BA only, there is no corresponding requirement for the BA in TOP-003. It is only assumed that BA will need the data and list it in their data specification.
  - Recommend drafting team to include examples in Technical Rationale regarding "Start-up issues" and differentiate between synchronous generators and IBRs.
  - Reference to EOP-012-1 on page 9 of Technical Rationale – should it be changed to EOP-012-2?
    - *The SDT recommends this requirement apply to generation going into service three (3) years after the effective date of **EOP-012-1** (October 1, 2027).*
  - *Technical Rationale for Generator Cold Weather Critical Component: With the exclusion language added for any component and/or system located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32F, there is room for interpretation by registered entities that this could include inverters and* battery energy storage systems (BESS). Typically, inverters and BESS are in containers and their temperatures are controlled via HVAC systems. We recommend the drafting team look into this and provide further details on what is considered "permanent building".

Likes 0	
Dislikes 0	
Response	

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	
Robert Follini - Avista - Avista Corporation - 3	
Answer	
Document Name	
Comment	
EEI provided a proposed comment here, however it does not affect Avista and is not a strong statement. I don't think we should include it here.	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	
Document Name	
Comment	
MRO NSRF genuinely appreciates the hard work that the Standard Drafting Team has put into this drafting process. Their response to industry comments is a testament to the success of the Standard Drafting Process and MRO NSRF supports the approval of this draft based solely on the merits of the proposed language. However, MRO NSRF is concerned about the addition of R1.2.1.3. We feel that this addition increases documentation burden but does not add any reliability value, additionally this issue would be handled by the CAP process if there are startup issues that are classified as Generator Cold Weather Reliability Events.	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	
Document Name	
Comment	

Black Hills Corporation supports EEI and NAGF additional comments.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	
Document Name	
Comment	
AZPS has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Dane Rogers - Dane Rogers On Behalf of: Donald Hargrove, OGE Energy - Oklahoma Gas and Electric Co., 3, 1, 5, 6; - Dane Rogers, Group Name OG&E	
Answer	
Document Name	
Comment	
OG&E supports comments submitted by MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	
Document Name	
Comment	
AECI supports comments submitted by ACES.	

Likes 0	
Dislikes 0	

Response

Donald Lock - Talen Generation, LLC - 5

Answer	
Document Name	

Comment

It is unclear what is to be reported as R.1.2.1.3 “Start-up issues.” This should apparently be, “Normal start-up time(s), e.g. cold, warm and hot, and winter weather issues that can cause these times to be extended.” This need is particularly acute where the ISO does not allow declaring true start-up times, causing the market and regulatory criteria for identifying startup failures to be greatly different.

The reference to good utility practice in the Generator Cold Weather Constraint section of the Technical Rationale should be expunged. GO/GOPs in deregulated markets are not public utility companies, as confirmed in a recent landmark appeals court ruling (https://www.law.com/texaslawyer/2023/12/15/power-generator-companies-get-landmark-decision-in-winter-storm-uri-mdl/?slreturn=20240018071757).

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

1. Remove the heated building exclusion from the definition of Generator Cold Weather Critical Component.

a. The expanded definition for Generator Cold Weather Critical Component is misleading and does not align with the explanation provided in the technical rationale document for EOP-012-2 or with statements made by the Project 2021-07 team during public webinars. From the technical rationale document and webinar comments, the intent was to exclude critical components inside buildings with dedicated building heating equipment. The new definition employs the phrase “heating source that regularly maintains the space”. This phrasing opens the definition to heating sources that are not devices dedicated to building heating.

b. Additionally, the new definition does not support equipment reliability. The exclusion is based on the idea that freeze protection in the form of a building and dedicated heating is already in place to protect critical equipment. By excluding these components, the new definition would also exclude the associated freeze protection measures from requirements R4.5 which requires annual maintenance on freeze protection measures for critical components. Requirement R4.5 mandates maintenance activities to ensure improved equipment reliability, prevent winter reliability events, and prevent CAP entries on events. Excluding buildings and their dedicated heating equipment from the requirements of R4.5 puts the industry at risk of more winter reliability events and does not align with operating experience events learned during Winter Storm Uri related to open doors, windows, etc.

2. Requirements R4 and R5 should state that stations with an ECWT above 32oF are exempt from requirements R4.3, R4.4, R4.5, and R5.

a. Stations with an ECWT above 32oF cannot meet the requirements of R4 and R5 based on the current definitions for a Generator Cold Weather Critical Component, a Generator Cold Weather Reliability Event, and the wording of requirements R4 and R5.

b. Requirement R4 establishes the minimum content requirements for a station's Cold Weather Preparedness Plan. These minimums are:

i. R4.1: The station's ECWT.

ii. R4.2: Stations information required in R1.2.

iii. R4.3: A list of Generator Cold Weather Critical Components.

iv. R4.4: A list of freeze protection measures on the Generator Cold Weather Critical Components.

v. R4.5: Annual inspection and maintenance of the identified freeze protection measures.

c. Requirement R5 requires the training of all maintenance or operations personal responsible for implementing the Cold Weather Preparedness Plan.

d. The only actionable item in R4 that can be implemented is requirement R4.5.

e. Per the current definitions for a Generator Cold Weather Critical Component and for a Generator Cold Weather Reliability Event,

i. Generator Cold Weather Reliability Events only occur at or above the ECWT.

ii. Generator Cold Weather Critical Components must be able to cause a Generator Cold Weather Reliability Event.

f. A station with an ECWT above 32oF cannot have a Generator Cold Weather Reliability Event since the freeze related event would need to occur at a temperature warmer than 32oF.

g. Since the station cannot identify any Generator Cold Weather Critical Components since they cannot meet the requirements of R4.3.

h. The station cannot meet the requirements of R4.4. If no Generator Cold Weather Critical Components exist, protection on those critical components cannot be identified.

i. If no freeze protection measures have been identified under R4.4, the station cannot perform annual inspection and maintenance on measures that do not exits. This means the stations cannot meet the requirements of R4.5.

j. If R4.5 is the only actionable part of requirement R4, stations with an ECWT above 32oF cannot identify the maintenance and operations personnel who implement the actionable items in the plan if no actionable items exist under R4.5. Stations with an ECWT above 32oF cannot meet R5 since the training audience as defined in R5 does not exist

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

None.	
Likes 0	
Dislikes 0	
Response	
James Keele - Entergy - 3	
Answer	
Document Name	
Comment	
R1.2.1.3 - The term “start-up issues” is vague and not clearly defined in the standard. R1.2.2 - The phrase “concurrent wind speed and precipitation” appears to be optional in the 1st two instances but required in the 3rd option. Was this the intent?	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5	
Answer	
Document Name	
Comment	
Constellation has no additional comments Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	
Document Name	

Comment
R1.2.1.3 - The term “start-up issues” is vague and not clearly defined in the standard. R1.2.2 - The phrase “concurrent wind speed and precipitation” appears to be optional in the 1st two instances but required in the 3rd option. Was this the intent?

Likes 0	
Dislikes 0	

Response

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

Comment
NA

Likes 0	
Dislikes 0	

Response

Thomas Foltz - AEP - 5	
Answer	
Document Name	

Comment
AEP recommends revising the Technical Rationale document to provide detail-of and reasoning-behind the “12 continuous hours” language used in the first and second bullets of R2. Any insight behind exactly what that phrase contributes, and how, would be beneficial.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 6	
Answer	
Document Name	

Comment
Constellation has no additional comments. Kimberly Turco on behalf on Constellation segements 5 and 6

Likes 0	
Dislikes 0	

Response