

Standard Authorization Request (SAR)

Complete and submit this form, with attachment(s) to the [NERC Help Desk](#). Upon entering the Captcha, please type in your contact information, and attach the SAR to your ticket. Once submitted, you will receive a confirmation number which you can use to track your request.

The North American Electric Reliability Corporation (NERC) welcomes suggestions to improve the reliability of the bulk power system through improved Reliability Standards.

Requested information			
SAR Title:		Canadian-Specific Revision to Proposed Standard EOP-012-3 – Extreme Cold Weather Preparedness and Operations	
Date Submitted:		March 14, 2025	
SAR Requester			
Name:	Alexandre Bertrand, (Hydro-Québec), Constantin Chitescu (Ontario Power Generation), Jeffrey Streifling (NB Power), Kristy Lee Young (Manitoba Hydro), Abbas Munir (Bruce Power)		
Organization:	Electricity Canada Members from Québec (Hydro-Québec), Ontario (Ontario Power Generation and Bruce Power), New Brunswick (New Brunswick Power Corporation), and Manitoba (Manitoba Hydro)		
Telephone:		Email:	
SAR Type (Check as many as apply)			
<input type="checkbox"/> New Standard	<input type="checkbox"/> Imminent Action/ Confidential Issue (SPM Section 10)		
<input checked="" type="checkbox"/> Revision to Existing Standard	<input checked="" type="checkbox"/> Variance development or revision		
<input type="checkbox"/> Add, Modify or Retire a Glossary Term	<input type="checkbox"/> Other (Please specify)		
<input type="checkbox"/> Withdraw/retire an Existing Standard			
Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)			
<input type="checkbox"/> Regulatory Initiation	<input type="checkbox"/> NERC Standing Committee Identified		
<input type="checkbox"/> Emerging Risk (Reliability Issues Steering Committee) Identified	<input type="checkbox"/> Enhanced Periodic Review Initiated		
<input type="checkbox"/> Reliability Standard Development Plan	<input checked="" type="checkbox"/> Industry Stakeholder Identified		
What is the risk to the Bulk Electric System (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):			
Registered entities from across Canada have indicated that given the fact that Canadian entities successfully operate in below-freezing temperatures for up to six (6) months of the year, extreme cold weather does not jeopardize the reliable operation of the power system in Canada as described by the Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity Joint Staff Report (the "Report") into the February 2021 extreme cold weather event that occurred in the southwest United States. Consequently, due to current practices and mitigation efforts, extreme cold weather has not jeopardized the reliable operation to the power system in Canada.			

Requested information

Ultimately, the existing EOP-012 reliability standard's intention of addressing reliability-related findings from the Report poses difficulties for Canadian entities caused by differences between Canadian and U.S. regulatory environments.

Accordingly, this Canadian-specific revision to proposed EOP-012 Reliability Standard aims to more appropriately reflect the geographical differences where Canadian peak demand typically occurs during winter months and where Canadian generating units are economically constrained to be suitable for winter operation. This Canadian-specific revision to the EOP-012 standard also aims to more appropriately reflect regulatory practices and processes in Canada.

Purpose or Goal (What are the reliability gap(s) or risk(s) to the Bulk Electric System being addressed, and how does this proposed project provide the reliability-related benefit described above?):

Registered Canadian entities from the provinces of Québec, Ontario, New Brunswick, and Manitoba have indicated support in developing an Extreme Cold Weather Preparedness and Operations Reliability Standard that aligns with provincial regulatory practices and processes and considers their unique climatic conditions. These Canadian Registered Entities have extensive experience on mitigating the reliability impact of extreme cold weather on their power systems and this approach has ensured that the Bulk Electric System (BES) remains reliable and resilient during extreme cold weather conditions, ultimately benefiting the overall reliability of the electric system in North America.

The goal of this SAR is to better reflect the following Canadian specificities:

1. Canadian Registered Entities regulatory practices and processes that vary from province to province. The current EOP-012-3 Reliability Standard should be revised to allow Canadian jurisdictions to define Canadian-specific language that is needed to align with the regulatory practices and processes for each province when it comes to the development, approval, implementation, and extensions requests of Corrective Action Plans (CAPs) and Generator Cold Weather Constraint declarations.
2. Geographical and winter climatic characteristics of the Canadian provinces, including operating in remote areas, require revisions to the EOP-012 Reliability Standard to allow Canadian Registered Entities to define and implement an alternative Extreme Cold Weather Temperature (ECWT) and Generator Cold Weather Reliability Event (GCWRE) on applicable units in locations where operating temperatures are well below the freezing point during the coldest time of the year.
3. The current language of apparent cause(s) due to freezing of equipment or impacts of freezing precipitation in the GCWRE definition needs to better focus investigation efforts on addressable cold-weather events that will lead to reliability improvements, efficiently excluding events that just happen to occur during cold-weather but are not cold-weather related and are therefore outside of the scope of this EOP-012-3 standard.

This variance shall be applicable in those Canadian jurisdictions where the variance has been approved for use by the applicable governmental authority or has otherwise become effective in the jurisdiction.

Requested information
<p>Project Scope (Define the parameters of the proposed project):</p> <p>The EOP-012 Extreme Cold Weather Preparedness and Operations Reliability Standard should be revised to allow Canadian jurisdictions to account for the following:</p> <ul style="list-style-type: none"> • The EOP-012 Reliability Standard should be updated to reflect Canadian-specific language regarding applicable governmental authorities and their applicable processes when it comes to development, approval, implementation, and extensions requests for CAPS and Generator Cold Weather Constraint declarations. • The EOP-012 Reliability Standard document should be updated to account for the environmental geographical differences specific to non-US entities, including allowing additional flexibility in the definition of ECWT and GCWRE. • The EOP-012 Reliability Standard should be updated to address the difference between freezing risk and cold temperature operating risk where the operating temperature is far below the freezing point. • The EOP-012 Reliability Standard should ensure that all new or modified requirements do not impose retroactive compliance obligations as result of differences in the standard effective dates for non-US entities by clearly specifying an enforcement date starting with the standard effective date in Canadian specific jurisdictions. • Modify or remove language that implies modification, construction or enhancement of facilities requiring economic investment. For example, in Manitoba, the Manitoba Hydro Act, C.C.S.M. c. H190, requires that a reliability standard adopted may not: <ul style="list-style-type: none"> a. Have the effect of requiring the construction or enhancement of facilities in Manitoba; b. Apply to facilities in Manitoba that do not materially affect the regional electricity grid; or c. Relate to the adequacy of generation resources for Manitoba. <p>As currently written, R6, 6.3.2, 6.3.5, R7, and R8 of the EOP-012-3 draft standard fall under (a) above, which would preclude Manitoba from adopting this standard.</p>
<p>Detailed Description (Describe the proposed deliverable(s) with sufficient detail for a drafting team to execute the project. If you propose a new or substantially revised Reliability Standard or definition, provide: (1) a technical justification¹ of developing a new or revised Reliability Standard or definition, which includes a discussion of the risk and impact to reliability-of the BES, and (2) a technical foundation document (e.g., research paper) to guide development of the Standard or definition):</p> <p>NERC has spent a substantial amount of time and effort working with the industry to develop a FERC Order directed continent-wide extreme cold weather preparedness and operations Reliability Standard. The drafting team responsible for the development of the Canadian variance to the EOP-012 reliability standard shall address the points below:</p>

¹ The NERC Rules of Procedure require a technical justification for new or substantially revised Reliability Standards. Please attach pertinent information to this form before submittal to NERC.

Requested information

1. Canadian entities request that Canadian-specific revisions to the EOP-012 Reliability Standard recognize that they operate at different meteorological conditions that are routinely at temperatures close to their respective ECWT for extensive durations. Consequently, we request that the EOP-012 reliability standard provide the flexibility for Canadian jurisdictions to leverage their expertise and to build on their cold weather impact assessment methodologies to define alternative Extreme Cold Weather Events targeted to their unique climatic conditions.
2. Canadian entities have a concern with Requirement R2, applicable to generating units that begin commercial operation between October 1, 2027, and March 31, 2028, for which the Generator Owner first contractually committed to design criteria relevant to the requirement before June 29, 2023.

Footnotes 4 and 6 for EOP-012 Requirement R2.1 state, “In non-U.S. jurisdictions, use the date the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of ECWT,” does not adequately reflect the differing provincial filing and enforcement processes. This SAR intends to use the effective date for the new Canadian-specific revision to the EOP-012 Reliability Standard, for non-US entities, as the applicability criteria for the Generator Owner first contractual commitment to design criteria, thus avoiding any confusion over implementation dates and retroactively imposing compliance obligations through new or revised requirements.

3. A concern with Requirement R6 is that the definition of GCWRE “apparent cause” is so broad that potentially half or more of all forced outages, derates, and startup failures may have to be investigated to rule out ‘freezing of equipment’ and ‘impacts of freezing precipitation,’ since Canadian entities may operate below freezing temperatures for six (6) months per year. Many outages, derates, and start-up failures would have no relationship to the fact that the weather happens to be below freezing when they occur, and an implicit requirement to investigate all outages and derates to rule out freezing equipment and freezing precipitation as causes would result in a disproportionate compliance burden on Canadian entities in regards to documenting which event is a cold weather event that would require a CAP and how to differentiate these events from other outages. A Canadian variance should allow a narrower definition of GCWRE to focus investigation efforts on events that are likely to have cold-weather related causes and thereby target investigation efforts on events that would be more likely to lead to reliability improvements.
4. The SAR should update the EOP-012 Reliability Standard to account for the environmental and geographical differences specific for Canadian entities. It shall be within the drafting team’s purview to determine the best way to target cold-weather requirements to benefit BES reliability in Canada.
5. The standard should be updated to differentiate between issues that occur around the freezing point (0°C) and operating temperatures that are well below the freezing point. For Canadian entities, that routinely and for extensive durations are operating at temperatures close to their respective ECWT it is not possible to have freezing precipitation (e.g., snow, ice, and freezing

Requested information

rain), when the operating temperature is well below 0°C that could impact equipment within the Generator Owner’s control. The drafting team should reconsider the exacerbating cooling effect, involving impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner’s control, to minimize unnecessary compliance burdens and exclude equipment with operational history at ECWT when the ECWT is, for example, below - 5°C.

The Canadian-specific revision of EOP-012 should account for the fact that the ‘freezing precipitation’ phenomenon (freezing rain, ice pellets, etc.) occurs near 0°C, while ECWTs and system peak loads may occur at much colder temperatures, at which the only precipitation that occurs is fluffy snow which typically has no operational impact. In addition, the term “sleet” is not a term used by Environment Canada as it is subject to conflicting definitions in Canadian English. Canadian entities may benefit from a flexible approach to manage icing issues near 0°C, since supply adequacy issues associated with system peak loads typically occur at much colder temperatures.

6. The Canadian-specific revision of EOP-012 should define an alternative process for assessing Generator Cold Weather Constraint declarations and CAP extensions that would be suitable for Canadian jurisdictions in which Compliance Enforcement Authorities are not set up to process issues associated with cold weather engineering. The drafting team should also consider entities other than the CEA for evaluating the technical merits of Cold Weather Constraint declarations and CAP extensions.
7. The drafting team should address the misalignment between the requirements and the measures in R2 and R3. Measures M2 and M3 provide as sufficient evidence of compliance the identification of generating unit minimum temperatures per Part 1.2.2 being equal to or less than the unit’s ECWT; however, the language in the Requirements stipulates design requirements related to wind speed, operational dates, etc., that appears to be more stringent than the requirement implicit in the measures that the generating unit minimum temperature merely needs to be colder than the ECWT. The carveout for generating units with minimum temperatures demonstrated to be colder than the ECWT should be moved into the requirement language of R2 and/or R3.

Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):

This SAR will better target requirements to advance BES reliability during cold conditions in Canada, as Canadian entities operate successfully within extreme cold weather almost six (6) months of the year.

Implementation of CAPs as written in the current EOP-012-3 standard may not work in certain provincial regulatory frameworks by which investments are vetted and approved. The SAR will update the EOP-012 standard to appropriately reflect the regulatory frameworks that exist in affected Canadian provinces.

Requested information
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (e.g., Dispersed Generation Resources):
None identified.
To assist the NERC Standards Committee in appointing a drafting team with the appropriate members, please indicate to which Functional Entities the proposed standard(s) should apply (e.g., Transmission Operator, Reliability Coordinator, etc. See the NERC Rules of Procedure Appendix 5A:
GO/GOP
Do you know of any consensus building activities ² in connection with this SAR? If so, please provide any recommendations or findings resulting from the consensus building activity.
Canadian entities not subject to FERC's jurisdiction have repeatedly expressed through commenting and balloting the need for a Canadian-specific revision of the EOP-012 Reliability Standard, as well as through Drafting Team meeting participation, and most recently during meetings between NERC, NPCC, and Canadian entities. The proposed changes are well supported and reflect the unique needs and conditions of Canadian provinces.
Are there any related standards or SARs that should be assessed for impact as a result of this proposed project? If so, which standard(s) or project number(s)?
Project 2024-03 Revisions to EOP-012-2 EOP-012-3 Extreme Cold Weather Preparedness and Operations
Are there alternatives (e.g., guidelines, white paper, alerts, etc.) that have been considered or could meet the objectives? If so, please list the alternatives with the benefits of using them.
No alternatives have been identified.

Reliability Principles
Does this proposed standard development project support at least one of the following Reliability Principles (Reliability Principles)? Please check all those that apply.
<input checked="" type="checkbox"/> 1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input type="checkbox"/> 2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/> 3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input type="checkbox"/> 4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.

² Consensus building activities are occasionally conducted by NERC and/or project review teams. They typically are conducted to obtain industry inputs prior to proposing any standard development project to revise, or develop a standard or definition.

Reliability Principles	
<input type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
<input checked="" type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
<input type="checkbox"/>	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
<input type="checkbox"/>	8. Bulk power systems shall be protected from malicious physical or cyber attacks.

Market Interface Principles	
Does the proposed standard development project comply with all of the following Market Interface Principles ?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	YES
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	YES
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	YES
4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.	YES

Identified Existing or Potential Regional or Interconnection Variances	
Region(s)/ Interconnection	Explanation
<i>e.g., NPCC</i>	

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SAR Status Tracking (Check off as appropriate).	
<input type="checkbox"/> Draft SAR reviewed by NERC Staff <input type="checkbox"/> Draft SAR presented to SC for acceptance <input type="checkbox"/> DRAFT SAR approved for posting by the SC	<input type="checkbox"/> Final SAR endorsed by the SC <input type="checkbox"/> SAR assigned a Standards Project by NERC <input type="checkbox"/> SAR denied or proposed as Guidance document
Risk Tracking.	
<input type="checkbox"/> Grid Transformation <input type="checkbox"/> Resilience/Extreme Events <input type="checkbox"/> Security Risks	<input type="checkbox"/> Energy Policy <input type="checkbox"/> Critical Infrastructure Interdependencies

Version History

Version	Date	Owner	Change Tracking
1	February 12, 2025		First version