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## Project QC-2025-05

### TPL-008-01 – Transmission System Planning Performance Requirements for Extreme Temperature Events

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#### 1. OVERVIEW OF THE STANDARDS

##### 1.1. Applicability

The Reliability Coordinator (hereinafter, the “Coordinator”) hereby petitions for the approval of new reliability standard TPL-008-01.

Reliability Standard TPL-008-01 applies to the functional entities listed in the table below.

Standard	Functional Entity
TPL-008-01	Transmission Planner (TP) Planning Coordinator (PC)

In Québec, the same Registered Entity, Hydro-Québec, performs these two (2) reliability functions.

##### 1.2. Purpose of the Standards

This section presents the title, followed by the purpose, of the standard covered by this request.

- **TPL-008-01 – Transmission System Planning Performance Requirements for Extreme Temperature Events:** Establish Transmission system planning performance requirements to develop a Bulk Power System (BPS) that will operate reliably during extreme heat and extreme cold temperature events.

##### 1.3. Regulatory Context

On June 15, 2023, the Federal Energy Regulatory Commission (“FERC”) issued a Final Rulemaking to direct the North American Electric Corporation (“NERC”) to develop a new or to modify Reliability Standard TPL-001-5.1 to address a lack of long-term planning requirement(s) for extreme heat and cold weather events. NERC initiated Project 2023-07 to consider the recommendations for Reliability Standard TPL-008-1 contained in the FERC Order 896.<sup>1</sup> As a result, Reliability Standard TPL-008-01 was developed. Its was adopted by the NERC Board of Trustees on December 10, 2024, filed with FERC on December 17, 2024 and approved by the FERC on February 20, 2025 in letter Order No. RD25-4-000<sup>2</sup>. It will come into force in the United States on April 01, 2026<sup>3</sup>.

Pursuant to Section 85.6 of the *Act Respecting the Régie de l’énergie*, the Coordinator is filing for adoption by the Régie de l’énergie (the “Régie”) the reliability standard set out by NERC, along with its Québec appendix.

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<sup>1</sup> FERC Order 896 [https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20230615-3100&optimized=false](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20230615-3100&optimized=false)

<sup>2</sup> FERC letter Order No. RD25-4-000, retrieved from <https://www.nerc.com/FilingsOrders/us/Pages/2025FERCOrdersRules.aspx>

<sup>3</sup> United States Standards Subject to Future Enforcement, retrieved from <https://www.nerc.com/pa/Stand/Pages/USRelStand.aspx>

#### 1.4. Specific Provisions for Québec

The Coordinator proposes the following specific provisions in the “Applicability” section of the TPL-008-1 standard:

- The Coordinator suggests replacing all references to the Bulk Electric System (BES) with the Main Transmission System (RTP).
- In Table 1, the contingency RTP Level for P1 and P7 is 400 kV and above instead of 200 kV and above.
- The Coordinator clarifies that the Regional Reliability Organization mentioned in the standard refers to the NPCC.

#### 1.5. Proposed Effective Dates

Given the importance of having uniform practices with mandatory standards in effect in Canada and the United States, the Coordinator requests effective dates as follows, which are aligned with the implementation plan for NERC Project 2023-07<sup>4</sup>:

- Standard TPL-008-1 and definition of Extreme Temperature Assessment shall become effective on the first day of the first calendar quarter that is twelve (12) months after the effective date of the Régie’s order approving the standard.
- Entities shall be required to comply with Requirement R1 upon the effective date of Reliability Standard TPL-008-1.
- Entities shall not be required to comply with Requirements R2, R3, R4, R5, and R6 until twenty-four (24) months after the effective date of Reliability Standard TPL-008-1.
- Entities shall not be required to comply with Requirements R7, R8, R9, R10, and R11 until forty-eight (48) months after the effective date of Reliability Standard TPL-008-1.
- Subsequent Extreme Temperature Assessments must be completed no later than five calendar years following the previous Extreme Temperature Assessment.

Requirements	Proposed implementation date for TPL-008-1 in Québec
Standard TPL-008-1 and definition of Extreme Temperature Assessment	Effective on the first day of the first calendar quarter that is twelve (12) months after the Régie’s approval of the Standard.
Requirement R1	Effective upon the effective date of Reliability Standard TPL-008-1, that is, the first day of the first calendar quarter that is twelve (12) months after the Régie’s approval of the Standard.
Requirements R2, R3, R4, R5, and R6	Effective on the first day of the first quarter that is thirty-six (36) months after the Régie’s approval of the Standard.
Requirements R7, R8, R9, R10, and R11	Effective on the first day of the first quarter that is sixty (60) months after the Régie’s approval of the Standard.

<sup>4</sup> NERC Project 2023-07 Implementation Plan, retrieved on June 10, 2025, from [https://www.nerc.com/pa/Stand/Project202307ModtoTPL00151TransSystPlanPerfReqExWe/2023-07\\_Final\\_Ballot\\_Implementation\\_Plan\\_120224.pdf](https://www.nerc.com/pa/Stand/Project202307ModtoTPL00151TransSystPlanPerfReqExWe/2023-07_Final_Ballot_Implementation_Plan_120224.pdf)

The Coordinator considers that the criterion established by the Régie to have a minimum period between the date of adoption and the entry into force of 60 days<sup>5</sup> is respected within the framework of NERC implementation plan.

### 1.6. Standards to Retire

None.

### 1.7. Modifications to the Glossary

NERC Project 2023-07 proposes one (1) new definition associated with the TPL-008-1 Reliability Standard which shall come into effect when the TPL-008-1 comes into effect in Québec:

- **Extreme Temperature Assessment** – Documented evaluation of future Bulk Electric System performance for extreme heat and extreme cold benchmark temperature events.

## 2. ASSESSMENT OF RELEVANCE

In Québec, just like in other parts of the world, the frequency and magnitude of extreme weather events are expected to increase significantly under a changing climate<sup>6</sup>. Experience has shown that such events have a direct impact on the reliability of the Bulk-Power System and the populations that depend on it. The purpose of FERC Order No 896 was to mitigate the impacts of extreme weather events on the Bulk-Power System by requiring responsible entities to assess the risks associated with extreme weather events, to plan for these and to develop corrective actions accordingly.

There currently are two Transmission Planning (TPL) Reliability Standards: TPL-001-5.1 which establishes Transmission system planning performance requirements, and TPL-007-4 which establishes requirements for Transmission System Planned Performance during geomagnetic disturbance events. TPL-001-5.1 provides a broad framework for an annual transmission system planning under various conditions, should the system fail to meet performance requirements. However, there are no provisions included in TPL-001-5.1 to develop a Corrective Action Plan in case of extreme weather events with severe impacts.

As such, the NERC standard drafting team determined that to comply with FERC Order No 896, developing a new Reliability Standard would be the cleanest way to proceed, as opposed to modifying TPL-001-5.1.

The TPL-008-1 standard deals specifically with extreme temperature events; it focuses on a subset of contingencies included in Table 1 of Reliability Standard TPL-001-5.1, namely P0, P1, and P7, which are considered more likely to occur under extreme temperature conditions. It excludes P2, P3, P4, P5, and P6 contingencies due to their lower probability of occurrence and complexity.

While the BES is at voltages of 100 kV and above in the United States, the standard drafting team found that Facilities most affected by past extreme weather events were at voltages of 200 kV and above. For that reason, the contingency BES level in Table 1 was set to 200 kV and above by NERC. For Quebec, considering that the RTP level is at 300 kV and above, the Coordinator finds it reasonable to raise the RTP contingency level of Table 1 to 400 kV instead of 200 kV. This reasoning also aligns with the extra-high voltage (EHV) level indicated in Table 1 of Reliability Standard TPL-001-5.1, which was also raised to 400 kV<sup>7</sup>.

<sup>5</sup> According to the decision [D-2016-011](#), the Régie fixed the minimum delay to 60 days between the adoption and effective date of standards.

<sup>6</sup> Environment and Climate Change Canada, "Climate Science 2050: National Priorities for Climate Change Science and Knowledge Report", 2024, accessed on June 10, 2025 from [CS2050 Priorities Report: Summary highlights - Canada.ca](#)

<sup>7</sup> Dossier R-4233-2023, [R-4233-2023-B-0051-DemAmend-PieceRev-2025\\_08\\_29.pdf](#)

While TPL-008-1 standard uses similar requirements to TPL-001-5.1, this allows industry to have one standard that focuses on extreme heat and extreme cold benchmark temperature events.

As permitted by Requirement R2 of standard TPL-008-1, the reference temperature library will be developed by the Planning Coordinator using data from Environment Canada weather stations, rather than using the NERC library.

NERC is of the opinion that TPL-008-1 standard is just, reasonable, not unduly discriminatory and is in the public interest. Furthermore, the standard has been adopted in neighbouring New-Brunswick<sup>8</sup> and Ontario<sup>9</sup>. Considering the importance of having uniform practices with mandatory standards in effect in neighbouring provinces and States, and considering that this standard was developed by recognized organizations in North America, including in Québec and neighboring jurisdictions, in accordance with the 2009 agreement between the Régie, NERC and NPCC with the authorization of the Québec government<sup>10</sup>, the Coordinator is of the opinion that Reliability Standard TPL-008-1 contributes to the reliability of the Québec System and harmonization with neighboring systems.

### 3. PRELIMINARY IMPACT ASSESSMENT

The analysis of extreme weather events is already being carried out by the entity subject to TPL-008-1 Standard, namely Hydro-Québec. However, the maximum temperatures could exceed the thermal limits in comparison to current practices within the entity subjected to the standard. In such case, the adoption of standard TPL-008-1 in Québec would have a moderate impact on the entities concerned.

The table below presents preliminary estimates of the impact on Québec Entities that are concerned with TPL-008-1.

TPL-008-1	Low	Moderate	High
Implementation		X	
Enforcement		X	
Monitoring		X	

#### Legend

- Low:** Normal industry practice that only requires minor adjustments to existing processes or practices.
- Moderate:** Change that requires the mobilization of some physical, human or financial resources to implement the proposed standard, enforce it or monitor its compliance.
- High:** Change that requires the mobilization of significant physical, human or financial resources to plan and implement the proposed standard, enforce it or monitor its compliance.

<sup>8</sup> Instance n°ER-002-2025 in Nouveau-Brunswick : <https://filemaker.nbeub.ca/fmi/webd/NBEUB%20Toolkit13>

<sup>9</sup> Ontario Energy Board review process: <https://www.ieso.ca/en/Sector-Participants/System-Reliability/OEB-Review-Process>

<sup>10</sup> Agreement pursuant to Decree No. 443-2009 issued on April 8, 2009 (in French only) at [https://www.regie-energie.qc.ca/fr/participants/dossiers/R-3996-2016/doc/R-3996-2016-B-0106-Audi-Piece-2018\\_10\\_26.pdf](https://www.regie-energie.qc.ca/fr/participants/dossiers/R-3996-2016/doc/R-3996-2016-B-0106-Audi-Piece-2018_10_26.pdf)

#### **4. FINAL IMPACT ASSESSMENT**

This section shall be completed upon receipt of the impact assessment forms and at the conclusion of the consultation process prior to filing of reliability standards with the Régie.