

Réponse du NPCC
(Version originale anglaise)



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SENT BY EMAIL

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Subject : TPL-001-5.1, Note 13d

Greetings,

Please see NPCC's responses in blue.

The Reliability Coordinator in Québec (RC) has filed the TPL-001-5.1 Reliability Standard for adoption with the Régie de l'Énergie in Québec (Régie). Our application is currently under review. In a letter dated June 12th, 2026¹, the Régie has requested that the RC seek NPCC's input on the items detailed below, in relation to the application of TPL-001-5.1 Standard in the United States. The objective is to clarify our common understanding of note 13d of Table 1.

Redundancy of protection systems, note 13d of Table 1

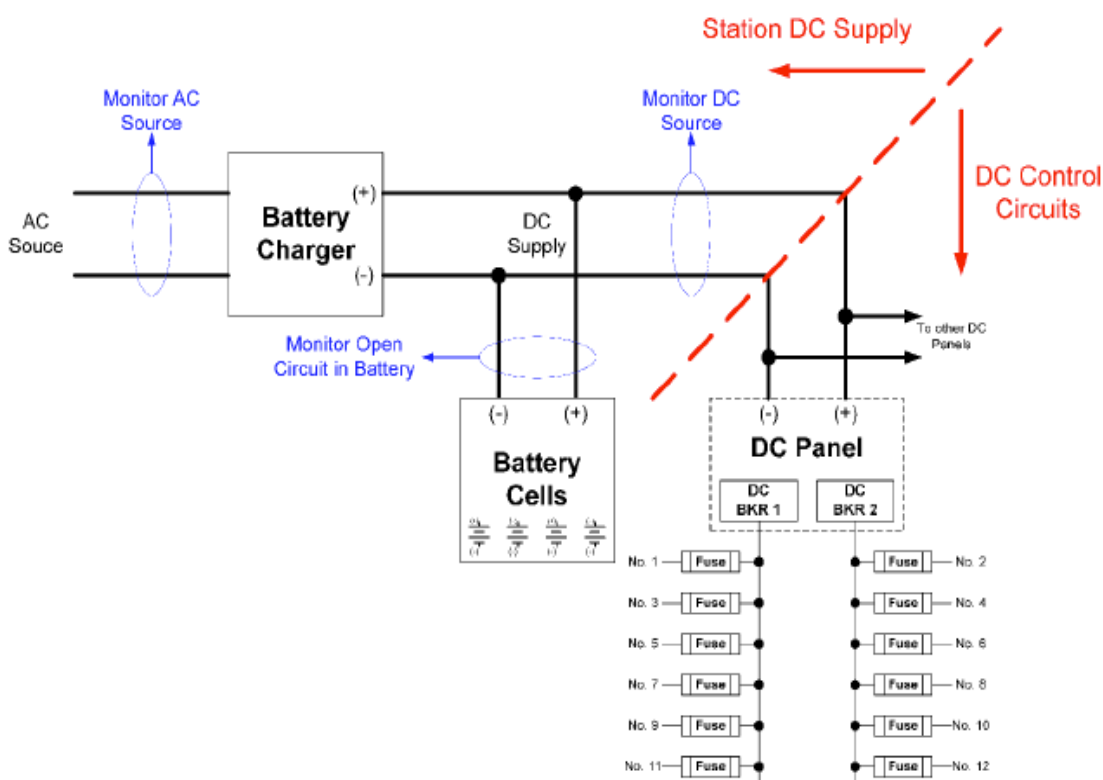
Please confirm the following or provide an explanation accordingly:

1. It is necessary to consider whether or not all other constituent parts of the control circuitry are redundant in order to determine whether or not the control circuitry is redundant, even if the DC distribution panel that is part of the control circuitry includes redundant circuit breakers.
In other words, merely noting that the protective relays are "split across two (2) different DC circuit breakers" in "a single (1) DC distribution panel", is not sufficient to consider a single control circuit as a redundant component of a Protection System, within the meaning of Note 13d, thereby excluding it from the simulations to be performed by the Transmission Planner for Category P5 events and faults 2e through 2h in the "Stability" column of the "Extreme Events" section of Table 1 (Simulations).²

NPCC Response: This is correct. All control circuitry shall be considered since fully evaluating DC control circuitry may result in identification of non-redundant components, even if redundant protective relays are off two different DC circuit breakers.

2. The following proposal by a registered entity—"A single DC distribution panel is not to be taken into account. However, the single main circuit breaker for the control circuits, included in this distribution panel, must be taken into account"—does not reflect the clarification provided in the Technical Rationale - "However, the trip coil(s), whether implemented singly or in pairs, are only part of the single control circuit; all its constituent parts should be included when considering whether the single control circuit may be a non-redundant component of a Protection System."³ Consequently, the registered entity's proposal regarding the DC distribution panel, taken on its own and in the absence of a finding of redundancy in the other constituent parts of the control circuitry, could not be considered a possible interpretation of the application of Note 13d.

NPCC Response: As defined in the NERC Glossary of Terms definition of Protection System, the station DC supply includes station battery, battery chargers and non-battery-based DC supply. Meanwhile, the control circuitry includes everything from where the station DC supply terminates through and including the trip coils, the wiring, as well as auxiliary and lockout relays. The diagram shown below is from the NERC Technical Paper titled “Protection System Reliability Redundancy of Protection System Elements” (published in November 2008). It shows the demarcation between DC supply and the remainder of DC control circuitry. As predicted, while redundancy of the DC panel itself does not impact evaluations of redundancy, all circuitry inside or before the DC Panel (such as breakers) is part of the DC Control Circuitry and must be included in the assessment of redundancy or lack thereof. For example, if there is a single main breaker between a DC supply and a single DC panel, this would not be considered redundant.



¹ [R-4233-2023-A-0042-Corresp-Autres-2026_06_12.pdf](#), page 5

² https://www.nerc.com/globalassets/standards/reliability-standards/tpl/2015-10_technical-rationale_10112018.pdf#page=11, page 5

³ https://www.nerc.com/globalassets/standards/reliability-standards/tpl/2015-10_technical-rationale_10112018.pdf#page=15, page 10

3. According to NERC, there is “no reason to ensure redundancy” for the components of a Protection System if the Simulations conclude that the grid performance criteria “have been achieved.”²

NPCC Response: Footnote 13 does not require any level of redundancy. Footnote 13 simply asks the PC and TP to give consideration to simulate those non-redundant components of a Protection System for applicable P5 Planning and Extreme Events in Table 1 of the TPL-001-5.1. The consideration of non-redundant components of a Protection System (Single Points of Failure) is necessary to properly simulate P5 event in order to assess whether required System performance is achieved. If required System performance is achieved after proper consideration and simulation, then there may be no need to make non-redundant components of a Protection System redundant. On the other hand, if required System performance is not achieved, then making non-redundant components of a Protection System redundant may be one of many choices for corrective actions to obtain required System performance.

NPCC encourages HQ and impacted entities to also review “[TPL-001-5.1 P5 Contingencies and Auditor Expectations](#)” for additional information.

Kindly note that the Régie has asked us to provide answers by July 13th and to comment on your response.

We would be pleased to organize a meeting the week of June 29th to discuss this at your convenience.

Best Regards,

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Manager

Regulatory Affairs for the Reliability Coordinator and Common Instructions