

NB Appendix
TPL-001-4-NB-0 – Transmission System Planning Performance Requirements

This appendix establishes modifications to the FERC approved NERC standard TPL-001-4 for its specific application in New Brunswick. This appendix must be read with TPL-001-4 to determine a full understanding of the requirements of the standard for New Brunswick. Where the standard and appendix differ, the appendix shall prevail.

A. Introduction

- 1. Title:** **Transmission System Planning Performance Requirements**
- 2. Number:** **TPL-001-4**
- 3. Purpose:** Establish Transmission system planning performance requirements within the planning horizon to develop a bulk power system that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.
- 4. Applicability:**
 - 4.1. Functional Entity**
 - 4.1.1.** Planning Authority. For the purpose of this standard "Planning Coordinator" shall mean "Planning Authority".
 - 4.1.2.** No New Brunswick modifications
- 5. Effective Date:** No New Brunswick modifications

B. Requirements

- R1.** No New Brunswick modifications
 - 1.1.** No New Brunswick modifications
- R2.** Each Transmission Planner and Planning Coordinator shall prepare an annual Planning Assessment of its portion of the bulk power system. This Planning Assessment shall use current or qualified past studies (as indicated in Requirement R2, Part 2.6), document assumptions, and document summarized results of the steady state analyses,

short circuit analyses, and Stability analyses. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

- 2.1. No New Brunswick modifications
- 2.2. No New Brunswick modifications
- 2.3. No New Brunswick modifications
- 2.4. No New Brunswick modifications
- 2.5. No New Brunswick modifications
- 2.6. No New Brunswick modifications
- 2.7. No New Brunswick modifications
- 2.8. No New Brunswick modifications

R3. No New Brunswick modifications

- 3.1. Studies shall be performed for planning events to determine whether the bulk power system meets the performance requirements in Table 1 based on the Contingency list created in Requirement R3, Part 3.4.
- 3.2. No New Brunswick modifications
- 3.3. No New Brunswick modifications
- 3.4. Those planning events in Table 1 that are expected to produce more severe System impacts on its portion of the bulk power system, shall be identified and a list of those Contingencies to be evaluated for System performance in Requirement R3, Part 3.1 created. The rationale for those Contingencies selected for evaluation shall be available as supporting information.
 - 3.4.1. No New Brunswick modifications
- 3.5. No New Brunswick modifications

R4. No New Brunswick modifications

- 4.1. Studies shall be performed for planning events to determine whether the bulk power system meets the performance requirements in Table 1 based on the Contingency list created in Requirement R4, Part 4.4.
 - 4.1.1. No New Brunswick modifications

4.1.2. No New Brunswick modifications

4.1.3. No New Brunswick modifications

4.2. No New Brunswick modifications

4.3. No New Brunswick modifications

4.4. Those planning events in Table 1 that are expected to produce more severe System impacts on its portion of the bulk power system, shall be identified, and a list created of those Contingencies to be evaluated in Requirement R4, Part 4.1. The rationale for those Contingencies selected for evaluation shall be available as supporting information.

4.4.1. No New Brunswick modifications.

4.5. No New Brunswick modifications

R5. No New Brunswick modifications

R6. No New Brunswick modifications

R7. No New Brunswick modifications

R8. No New Brunswick modifications

8.1. No New Brunswick modifications

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Table 1 – Steady State & Stability Performance Planning Events

Steady State & Stability:

No New Brunswick modifications

Steady State Only:

No New Brunswick modifications

Stability Only:

No New Brunswick modifications

Category	Initial Condition	Event ¹	Fault Type ²	Bulk Power System Level ³	Interruption of Firm Transmission Service Allowed ⁴	Non-Consequential Load Loss Allowed
P0	No New Brunswick modifications					
P1						
P2						
P3						
P4						
P5						
P6						
P7						

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Table 1 – Steady State & Stability Performance Extreme Events

Steady State & Stability

No New Brunswick modifications

Steady State

No New Brunswick modifications

Stability

No New Brunswick modifications

1. If the event analyzed involves bulk power system elements at multiple System voltage levels, the lowest System voltage level of the element(s) removed for the analyzed event determines the stated performance criteria regarding allowances for interruptions of Firm Transmission Service and Non-Consequential Load Loss.
2. No New Brunswick modifications.
3. Bulk power system level references include extra-high voltage (EHV) Facilities defined as greater than 300kV and high voltage (HV) Facilities defined as the 300kV and lower voltage Systems. The designation of EHV and HV is used to distinguish between stated performance criteria allowances for interruption of Firm Transmission Service and Non-Consequential Load Loss.
4. No New Brunswick modifications.
5. For non-generator step up transformer outage events, the reference voltage, as used in footnote 1, applies to the low-side winding (excluding tertiary windings). For generator and Generator Step Up transformer outage events, the reference voltage applies to the bulk power system connected voltage (high-side of the Generator Step Up transformer). Requirements which are applicable to transformers also apply to variable frequency transformers and phase shifting transformers.
6. No New Brunswick modifications.
7. No New Brunswick modifications.
8. No New Brunswick modifications.
9. No New Brunswick modifications.
10. No New Brunswick modifications.
11. No New Brunswick modifications.
12. An objective of the planning process is to minimize the likelihood and magnitude of Non-Consequential Load Loss following planning events. In limited circumstances, Non-Consequential Load Loss may be needed throughout the planning horizon to ensure that bulk power system performance requirements are met. However, when Non-Consequential Load Loss is utilized under footnote 12 within the Near-Term Transmission Planning Horizon to address bulk power system performance requirements, such interruption is limited to circumstances where the Non-Consequential Load Loss meets the conditions shown in Attachment 1. In no case can the planned Non-Consequential Load Loss under footnote 12 exceed 75 MW for US registered entities. The amount of planned Non-Consequential Load Loss for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.
13. No New Brunswick modifications.

Attachment 1

I. Stakeholder Process

No New Brunswick modifications

1. No New Brunswick modifications
2. No New Brunswick modifications
3. No New Brunswick modifications
4. No New Brunswick modifications
5. No New Brunswick modifications

II. Information for Inclusion in Item #3 of the Stakeholder Process

No New Brunswick modifications

1. No New Brunswick modifications
2. No New Brunswick modifications
3. No New Brunswick modifications
4. No New Brunswick modifications
5. No New Brunswick modifications
6. No New Brunswick modifications
7. No New Brunswick modifications
8. No New Brunswick modifications

III. Instances for which Regulatory Review of Non-Consequential Load Loss under Footnote 12 is Required

No New Brunswick modifications

1. The voltage level of the Contingency is greater than 300 kV
 - a. If the Contingency analyzed involves bulk power system Elements at multiple System voltage levels, the lowest System voltage level of the element(s) removed for the analyzed Contingency determines the stated performance criteria regarding allowances for Non-Consequential Load Loss under footnote 12, or
 - b. For a non-generator step up transformer outage Contingency, the 300 kV limit applies to the low-side winding (excluding tertiary windings). For a generator or generator step up transformer outage Contingency, the 300 kV limit applies to the bulk power system connected

voltage (high-side of the Generator Step Up transformer)

2. No New Brunswick modifications

C. Measures

M1. No New Brunswick modifications

M2. Each Transmission Planner and Planning Coordinator shall provide dated evidence, such as electronic or hard copies of its annual Planning Assessment, that it has prepared an annual Planning Assessment of its portion of the bulk power system in accordance with Requirement R2.

M3. No New Brunswick modifications

M4. No New Brunswick modifications

M5. No New Brunswick modifications

M6. No New Brunswick modifications

M7. No New Brunswick modifications

M8. No New Brunswick modifications

D. Compliance

1. Compliance Monitoring Process

1.1 Compliance Enforcement Authority

New Brunswick Energy and Utilities Board

1.2 Compliance Monitoring Period and Reset Timeframe

No New Brunswick modifications

1.3 Compliance Monitoring and Enforcement Processes:

No New Brunswick modifications

1.4 Data Retention

No New Brunswick modifications

1.5 Additional Compliance Information

No New Brunswick modifications

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2. Violation Severity Levels

	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	No New Brunswick modifications			
R2	No New Brunswick modifications			
R3	No New Brunswick modifications	The responsible entity did not perform studies as specified in Requirement R3, Part 3.1 to determine that the bulk power system meets the performance requirements for one of the categories (P2 through P7) in Table 1. OR The responsible entity did not perform studies as specified in Requirement R3, Part 3.2 to assess the impact of extreme events.	The responsible entity did not perform studies as specified in Requirement R3, Part 3.1 to determine that the bulk power system meets the performance requirements for two of the categories (P2 through P7) in Table 1. OR The responsible entity did not perform Contingency analysis as described in Requirement R3, Part 3.3.	The responsible entity did not perform studies as specified in Requirement R3, Part 3.1 to determine that the bulk power system meets the performance requirements for three or more of the categories (P2 through P7) in Table 1. OR The responsible entity did not perform studies to determine that the bulk power system meets the performance requirements for the P0 or P1 categories in Table 1. OR The responsible entity did not base its studies on computer simulation models using data provided in Requirement R1.

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	Lower VSL	Moderate VSL	High VSL	Severe VSL
R4	No New Brunswick modifications	The responsible entity did not perform studies as specified in Requirement R4, Part 4.1 to determine that the bulk power system meets the performance requirements for one of the categories (P1 through P7) in Table 1. OR The responsible entity did not perform studies as specified in Requirement R4, Part 4.2 to assess the impact of extreme events.	The responsible entity did not perform studies as specified in Requirement R4, Part 4.1 to determine that the bulk power system meets the performance requirements for two of the categories (P1 through P7) in Table 1. OR The responsible entity did not perform Contingency analysis as described in Requirement R4, Part 4.3.	The responsible entity did not perform studies as specified in Requirement R4, Part 4.1 to determine that the bulk power system meets the performance requirements for three or more of the categories (P1 through P7) in Table 1. OR The responsible entity did not base its studies on computer simulation models using data provided in Requirement R1.
R5	No New Brunswick modifications			
R6				
R7				
R8				

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E. Regional Variances

No New Brunswick modifications

Version History (maintained by NBEUB)

Version	NBEUB Approval Date	NB Appendix Effective Date	Change Tracking	Comments
0	04/14/14	07/01/15	1. Bulk Electric System(BES) replaced with “bulk power system” throughout 2. Replaced Regional Entity with NBEUB as the Compliance Enforcement Authority for NB 3. “Planning Coordinator” to be read as “Planning Authority” throughout	Enforcement dates: R1,R7 07/01/15 R2,R3,R4, 07/01/16 R5,R6,R8