

1 **Q. Reference: "2027 Capital Budget Application," Newfoundland Power Inc., May**
2 **29, 2026, Supporting Materials, Substations: 2.2, Substation Power**
3 **Transformer Strategy, Appendices A-D; and response to Request for**
4 **Information PUB-NP-012, pp. 1-2.**

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6 **Newfoundland Power states that PTX indices provide a measure of the**
7 **likelihood that normal degradation or abnormal conditions exist within a**
8 **transformer and that PTX results are used, together with other condition**
9 **information, in transformer replacement decision making.**

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11 **Please provide the relationship, if any, between each transformer condition**
12 **index produced by PTX and the probability of transformer failure. Where**
13 **Newfoundland Power or EPRI has established probability-of-failure values,**
14 **ranges, or correlations corresponding to PTX index values, please provide**
15 **those values and the supporting documentation. If no such relationship has**
16 **been established, please confirm.**

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18 **A.** The EPRI PTX Manual is proprietary and confidential to EPRI. To be responsive to the
19 Request for Information, Newfoundland Power has obtained permission from EPRI to
20 summarize relevant PTX methodology and threshold values for regulatory purposes;
21 however, Newfoundland Power is unable to publicly disclose the PTX Manual or
22 substantial excerpts from the Manual.

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24 According to the PTX methodology, a Normal Degradation Index greater than 0.25
25 indicates a power transformer that warrants further scrutiny. Normal Degradation Index
26 values above 0.60 are described as highly correlated with insulating paper that is no
27 longer capable of providing reliable service. The Normal Degradation Index is intended
28 to indicate the condition of the transformer paper insulation system and is not intended
29 to represent a probability of transformer failure.

30
31 PTX also produces abnormal condition indices that identify potential thermal, electrical,
32 or core-related concerns. Abnormal condition index values above 0.5 warrant additional
33 review and engineering assessment. Elevated abnormal condition indices indicate that
34 further investigation, testing, monitoring, inspection, or corrective action may be
35 appropriate. However, the PTX methodology indicates that the progression of abnormal
36 conditions and the timing of any potential failure are highly dependent on the specific
37 nature of the underlying condition.

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39 Based on Newfoundland Power's review of the PTX Manual, PTX indices are condition
40 indicators that identify power transformers requiring additional investigation and
41 engineering assessment. Newfoundland Power is not aware of any direct relationship
42 established by EPRI between PTX index values and a specific probability of transformer
43 failure, nor is Newfoundland Power aware of any probability-of-failure values, ranges, or
44 correlations associated with PTX index values.

1 In Newfoundland Power's experience, power transformers exhibiting elevated PTX
2 indices frequently demonstrate corresponding evidence of deterioration or abnormal
3 conditions through other testing and inspection activities. Accordingly, PTX has proven
4 to be an effective condition assessment tool for identifying transformers that warrant
5 further engineering review and consideration within Newfoundland Power's overall asset
6 management process.