

Q. Reference: Newfoundland Power's 2027 Capital Budget Application, Section 2.2, Substation Power Transformer Strategy

To confirm the deterioration trend, provide the following for the four power transformers proposed for replacement in the Application:

- a) Year-by-year PTX diagnostic results.**
- b) Condition assessment history, similar to that provided in Newfoundland Power's 2026 Capital Budget Application, Section 2.2, Attachments A, B and C.**

- A.**
- a) Attachment A provides the most recent PTX diagnostic results for the four transformers proposed for replacement.
 - b) Dissolved gas analysis results are updated annually in PTX as part of Newfoundland Power's annual transformer condition assessment process. The results of electrical testing performed during M4 maintenance activities, which are typically completed every 12 years, are also incorporated into PTX. In addition, the physical condition of each transformer is separately assessed annually. The transformer condition assessment histories provided in Newfoundland Power's *2026 Capital Budget Application*, section 2.2, Attachments A, B and C were developed using this information.

The information requested in part a) provides the historical PTX diagnostic results used to support the condition assessments of these transformers. Each data point represents the condition of the transformer at the time of the assessment and illustrates the deterioration trend that informed Newfoundland Power's replacement recommendations.

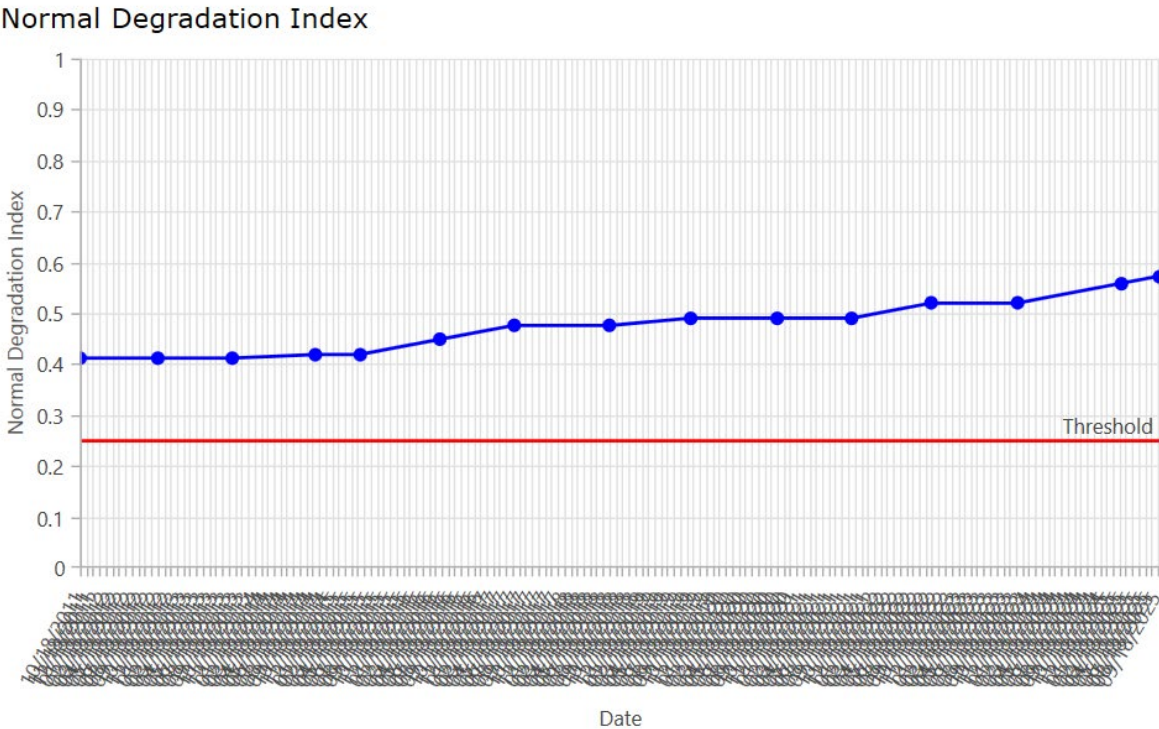
Attachment B provides the condition assessment history as requested.



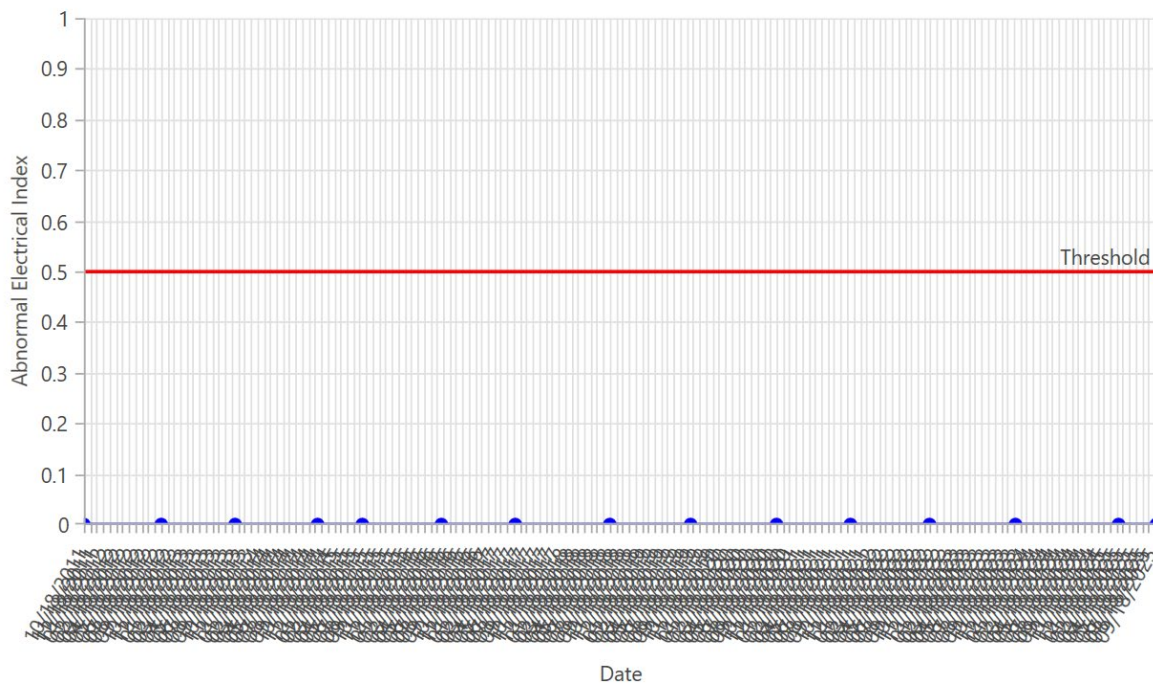
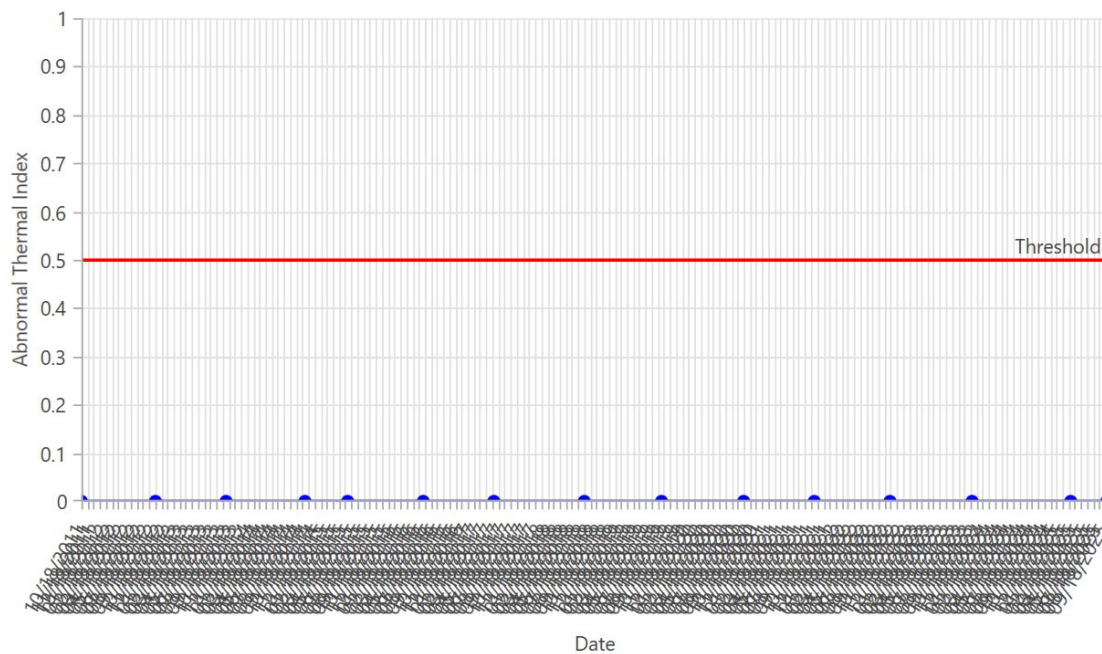
ATTACHMENT A:

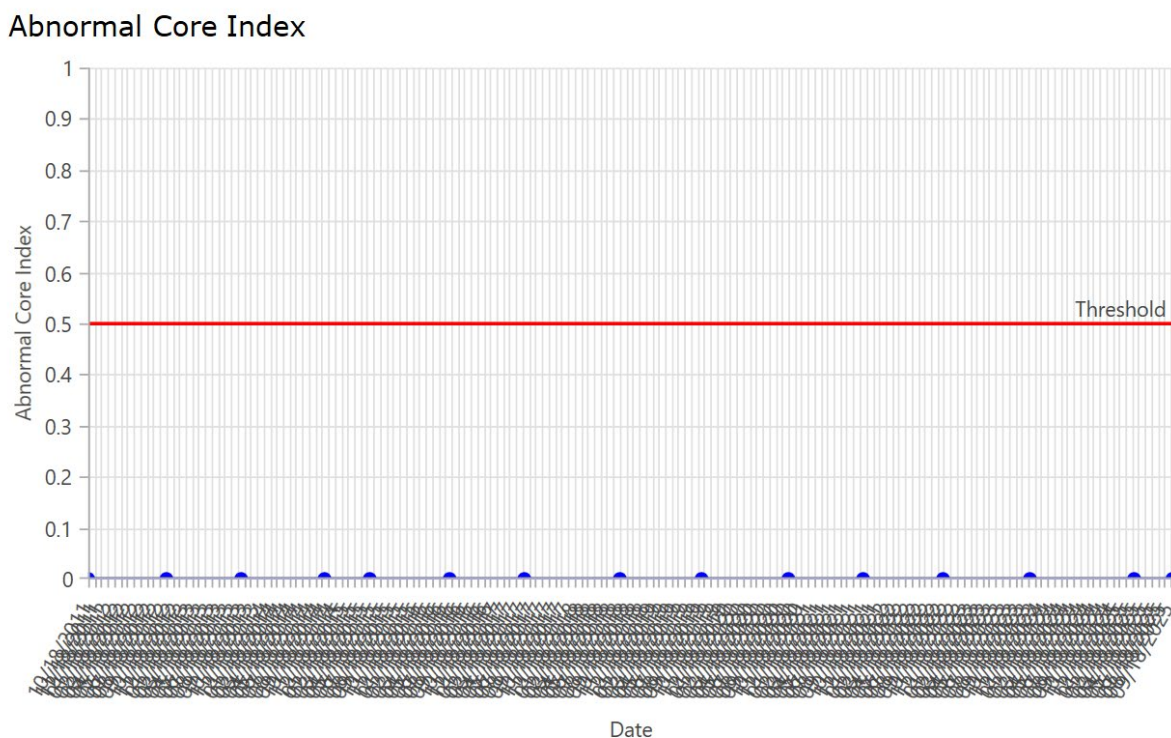
PTX Diagnostic Results

LAU-T1 (X-Axis is from October 18, 2011 to March 28, 2025)¹



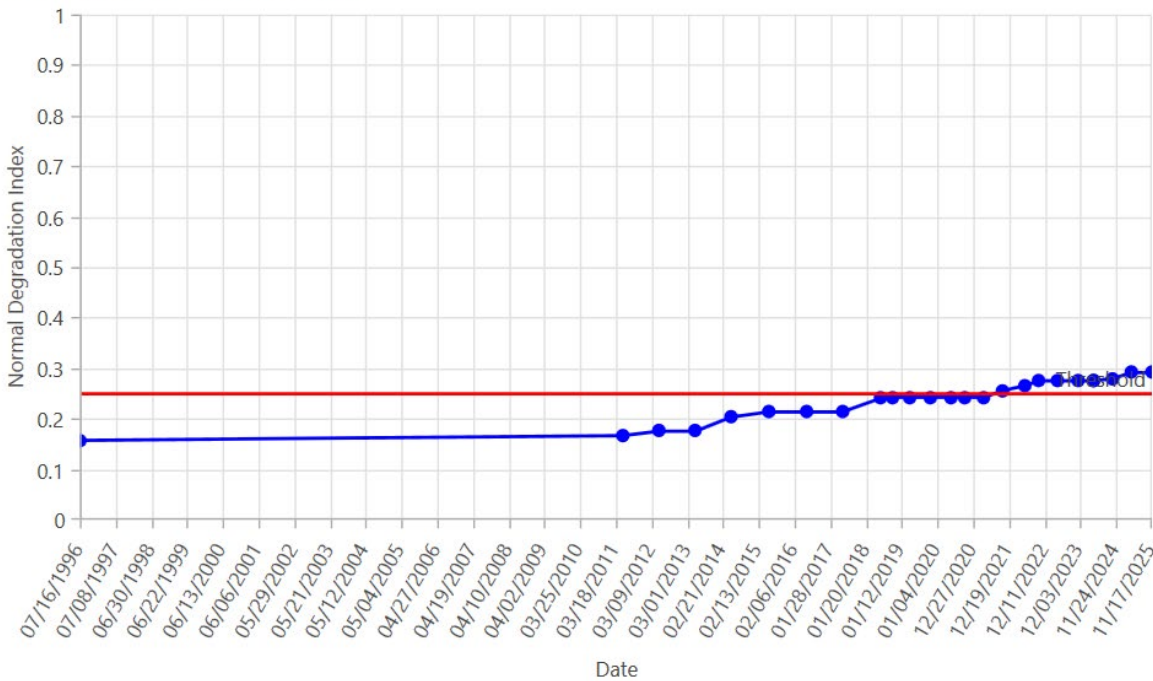
¹ Graphs are taken directly from PTX software. Formatting is unable to be altered and trendline data cannot be exported to excel for these indices.



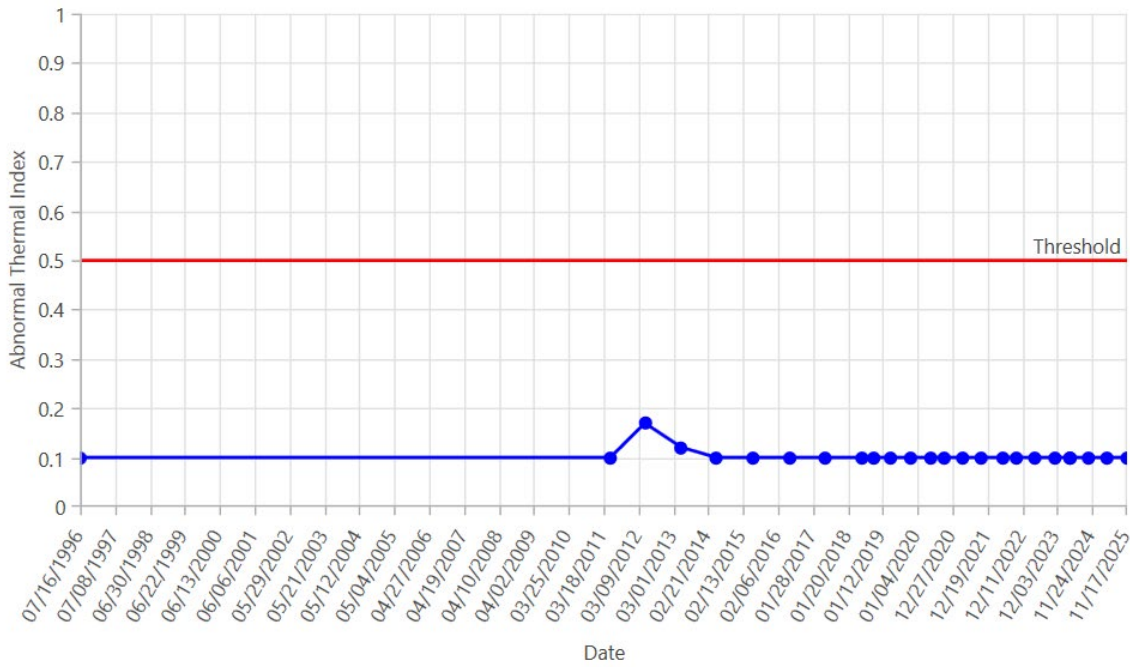


LBK-T1

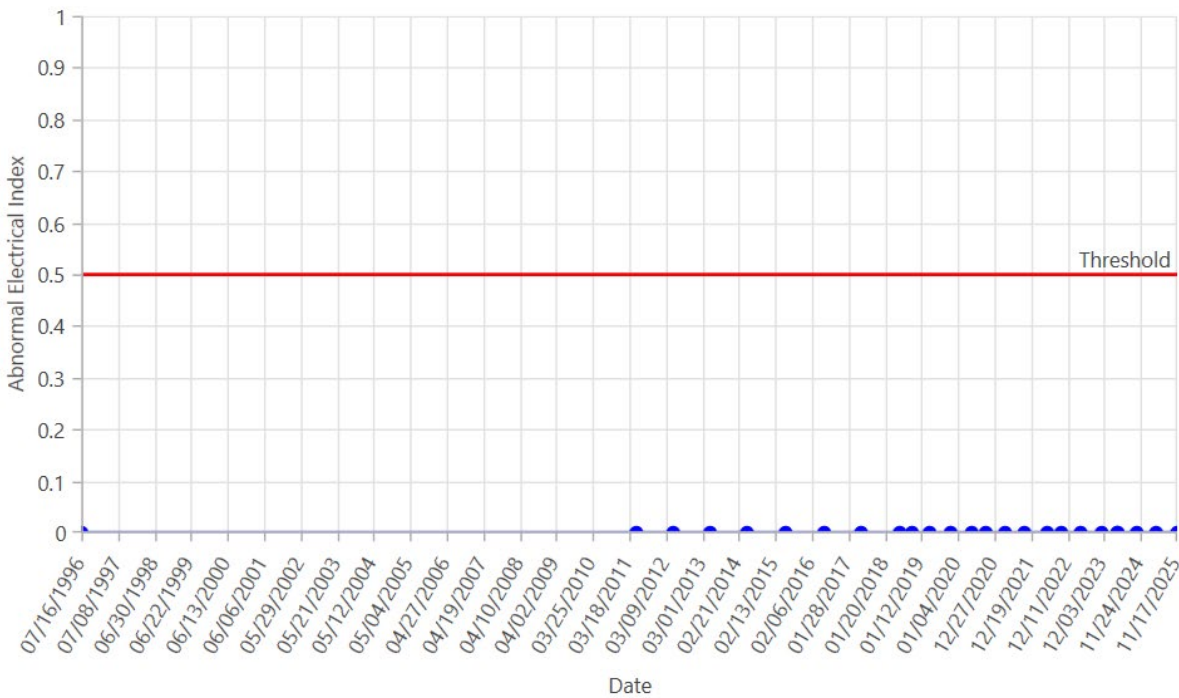
Normal Degradation Index



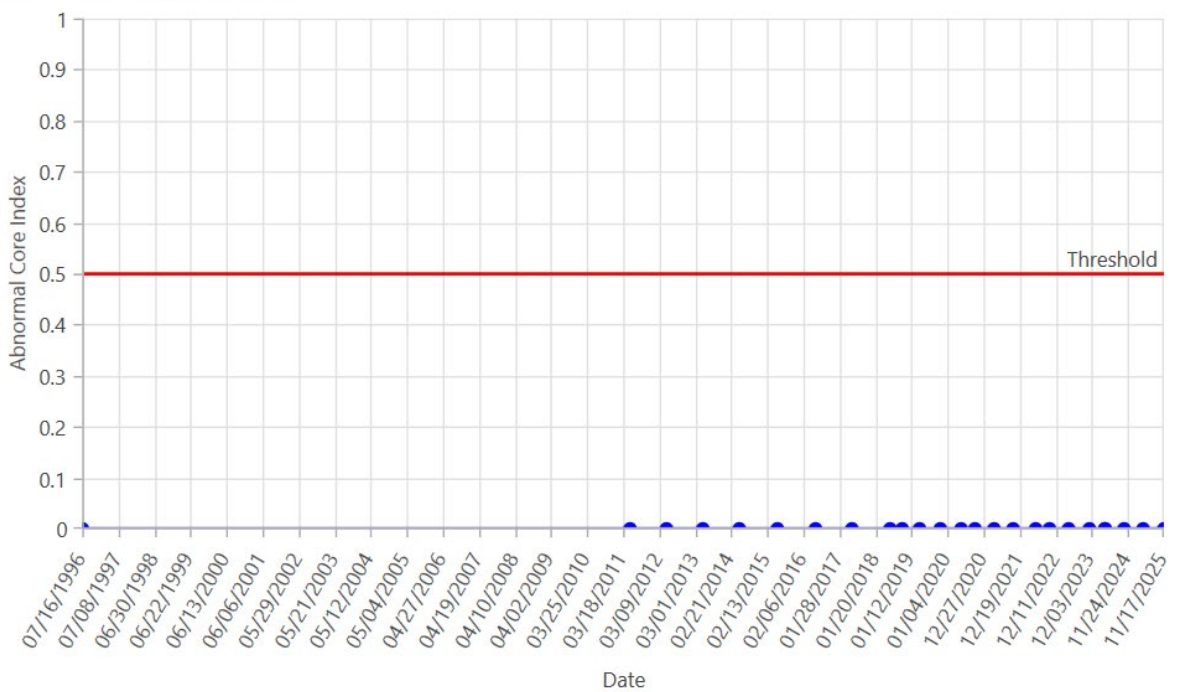
Abnormal Thermal Index



Abnormal Electrical Index

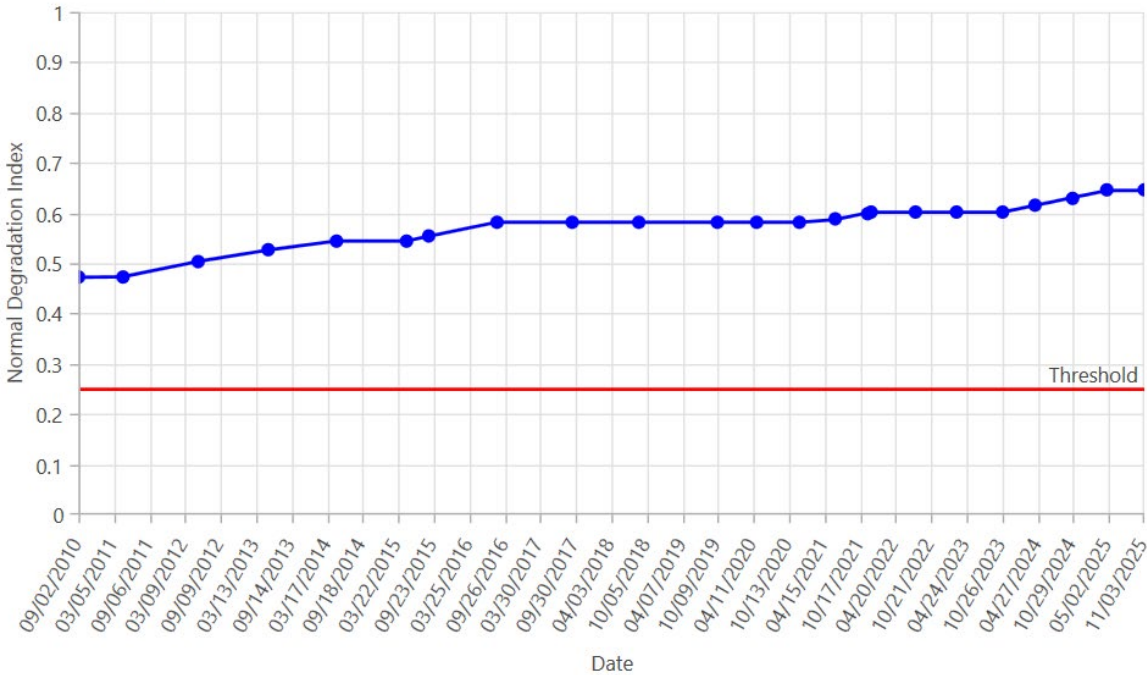


Abnormal Core Index

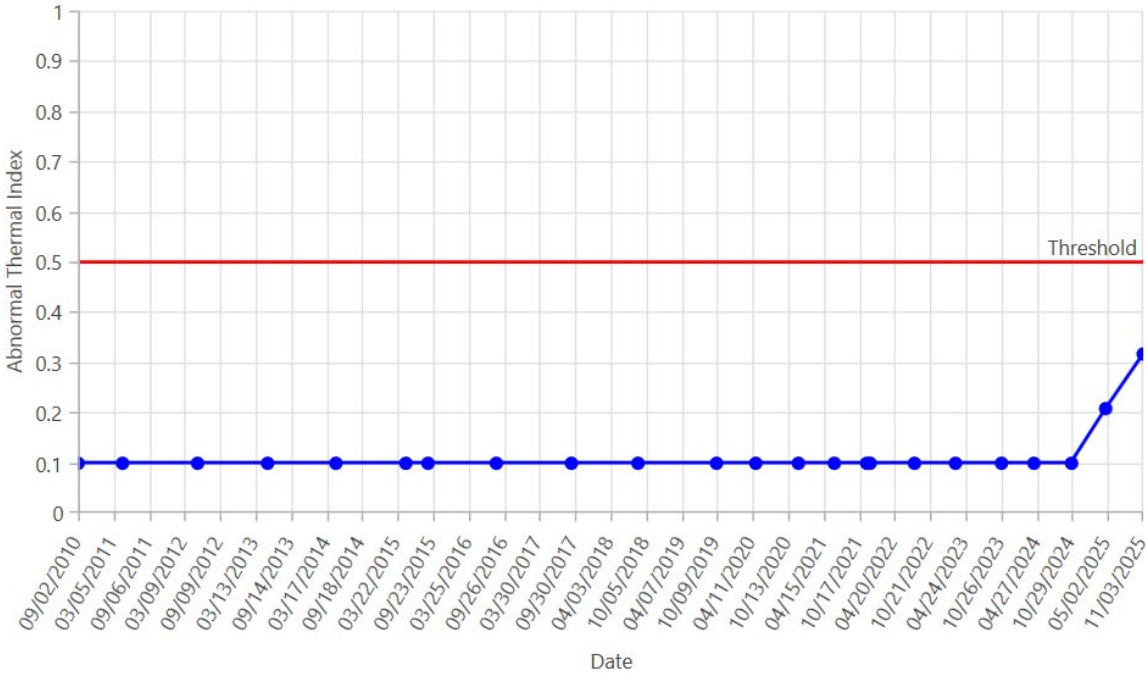


HAR-T1

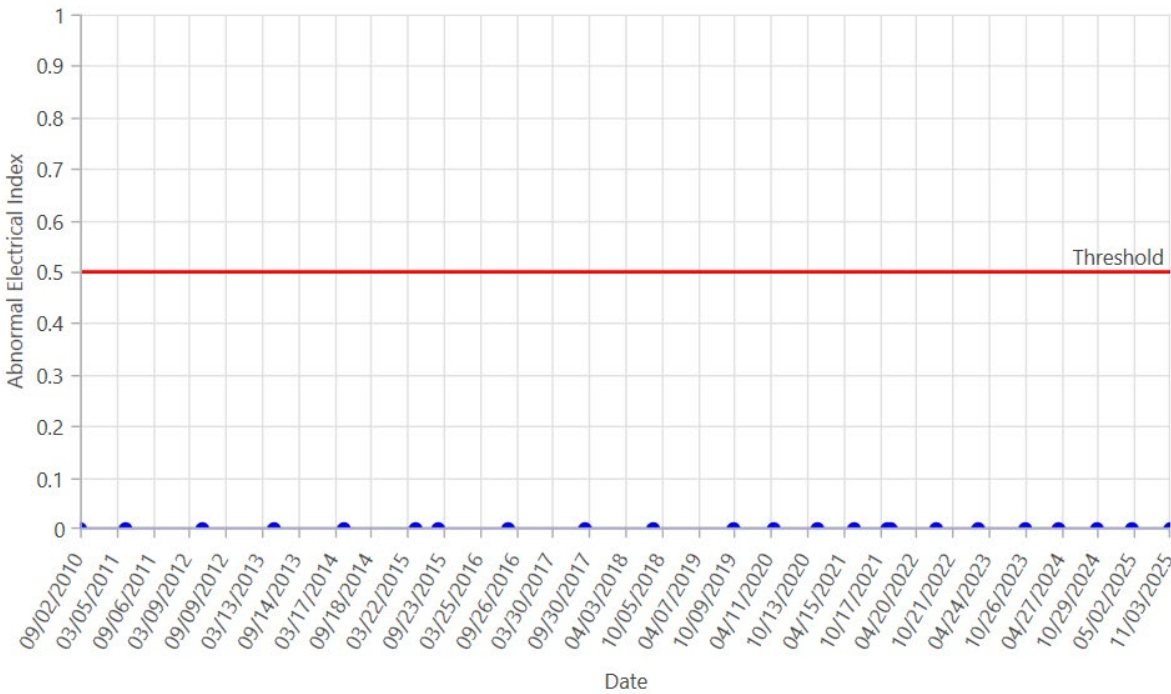
Normal Degradation Index

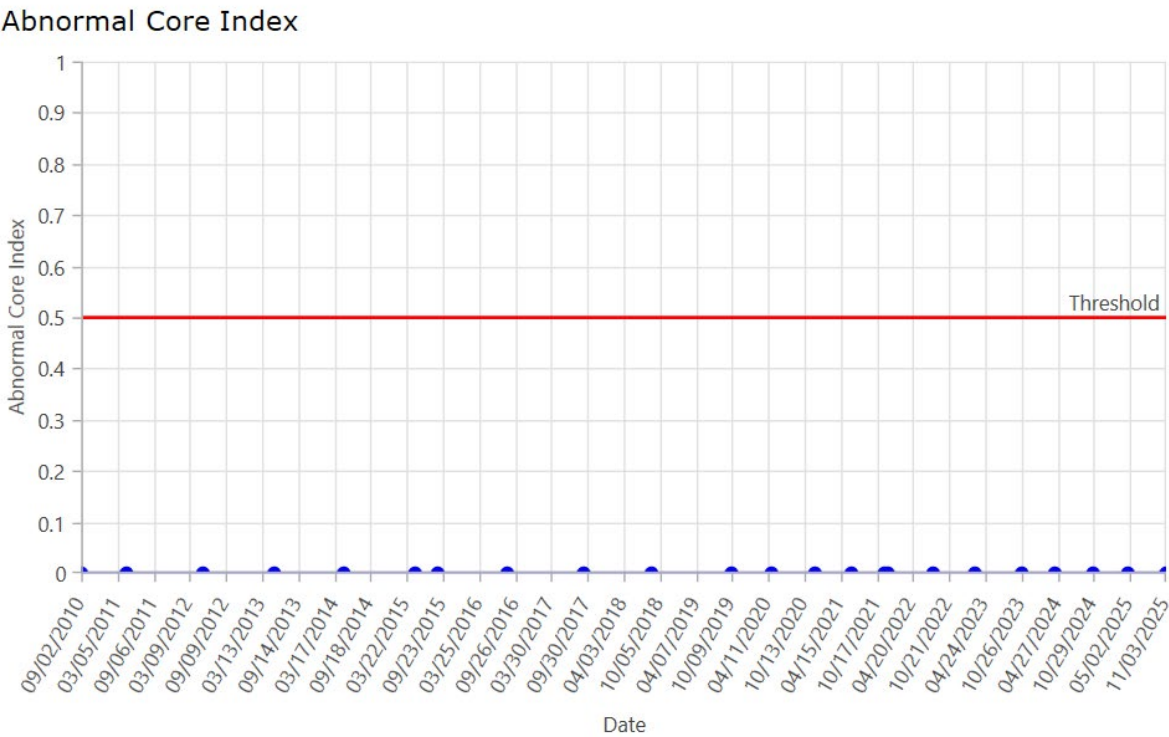


Abnormal Thermal Index



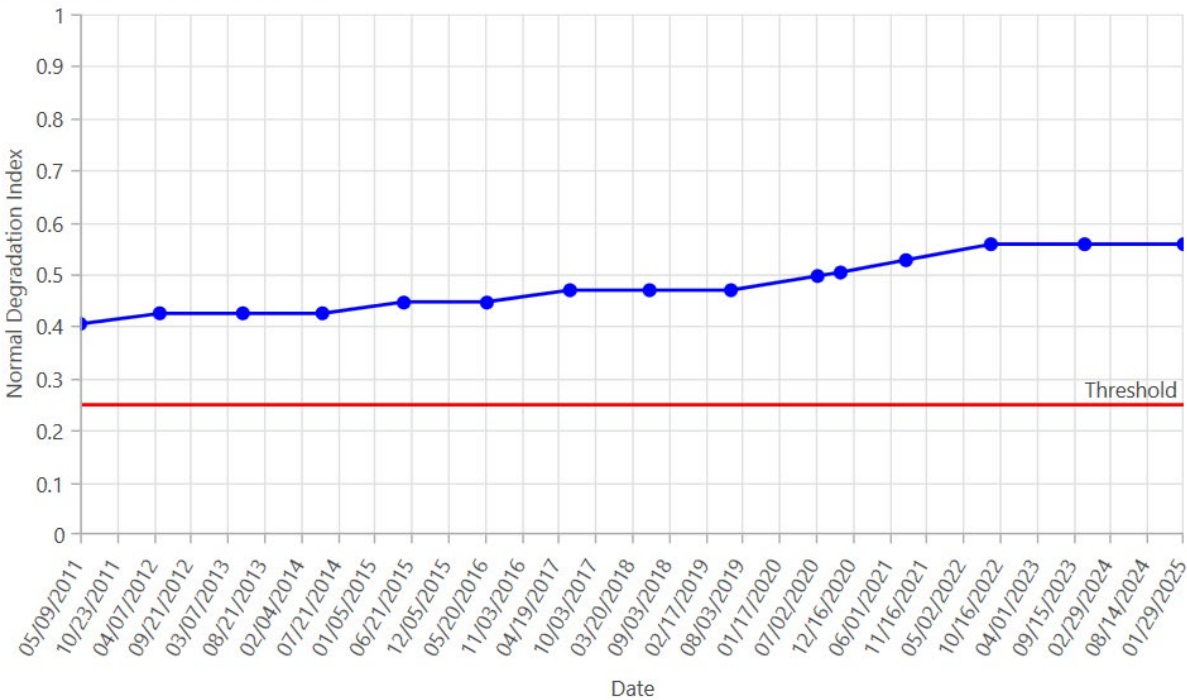
Abnormal Electrical Index



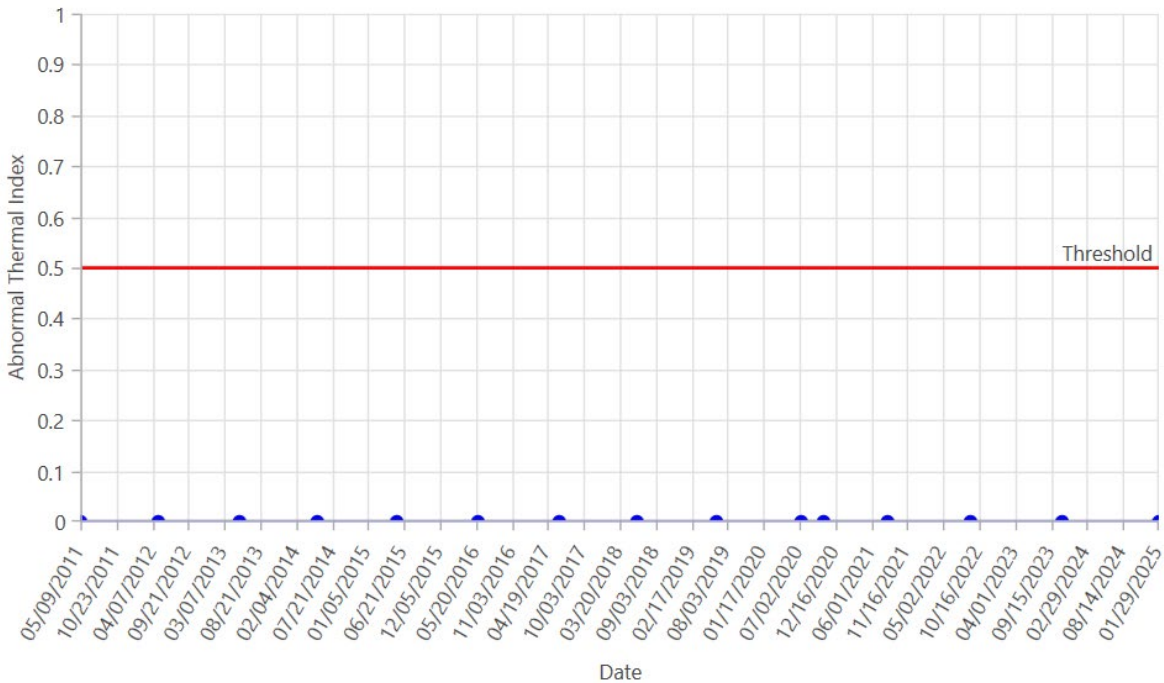


RRD-T3

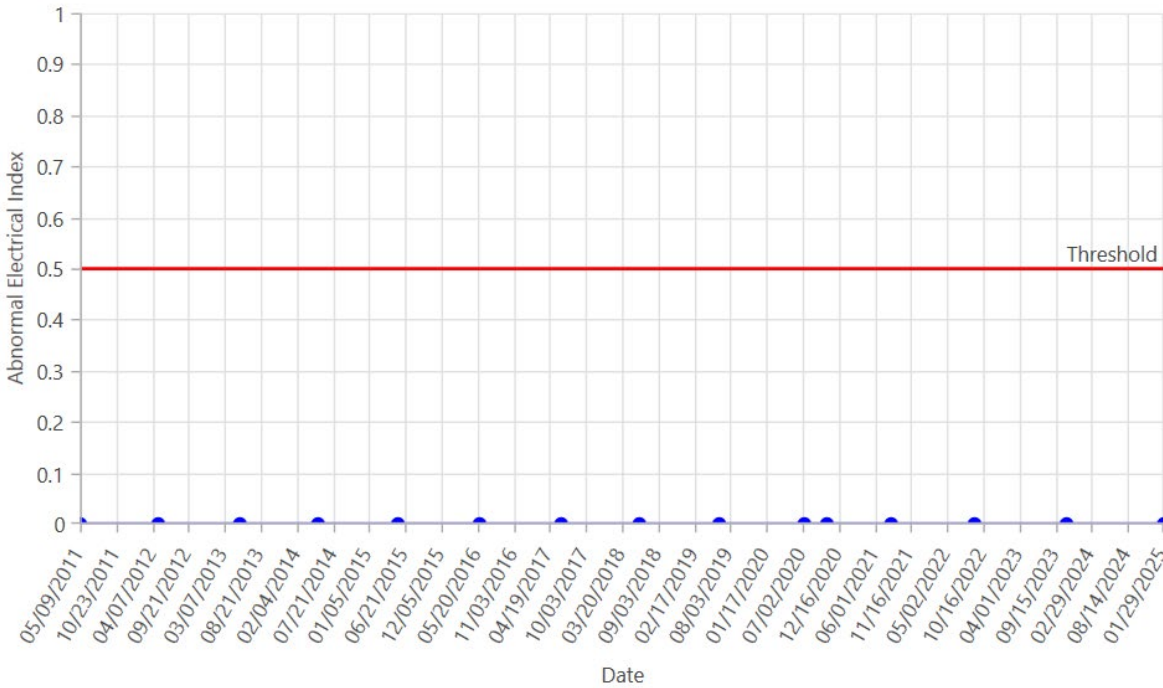
Normal Degradation Index



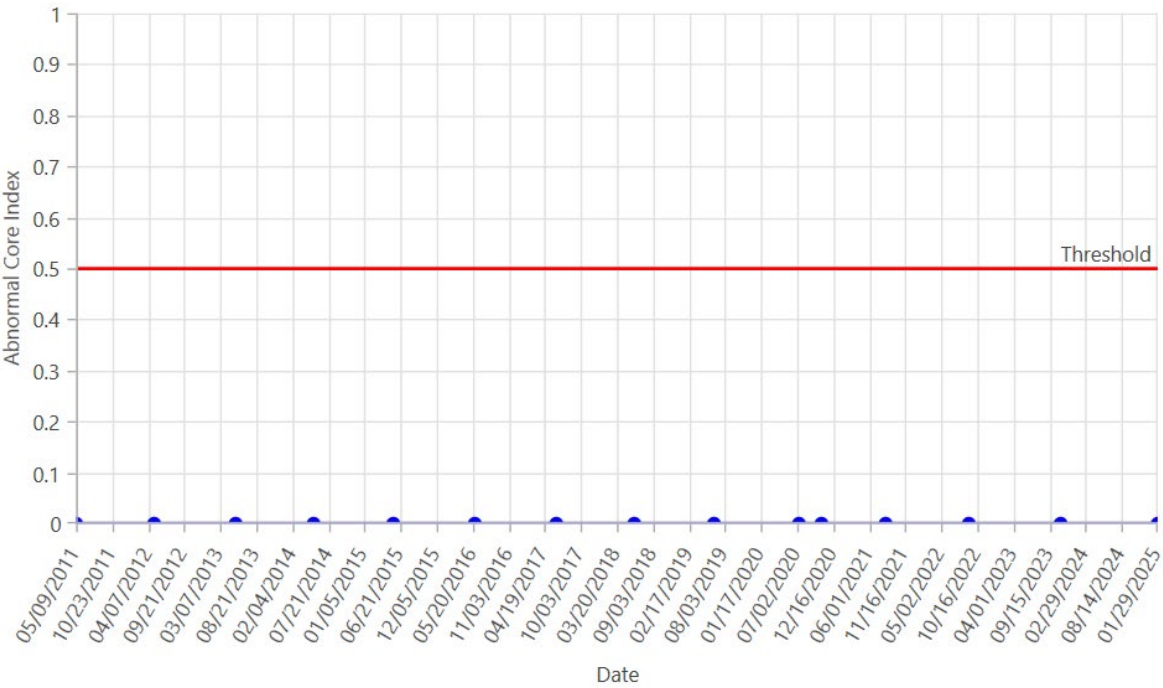
Abnormal Thermal Index



Abnormal Electrical Index



Abnormal Core Index





ATTACHMENT B:

Condition Assessment History

Table B-1
TJ|H2b Transformer Condition Assessment History – Power Transformer LAU-T1

Date	Estimated DP	Comments
10-31-2014	>1000	Continue normal operation. Paper condition is normal.
5-29-2015	939	Continue normal operation. Paper condition is normal.
6-6-2016	908	Continue normal operation. Paper condition is normal.
8-22-2018	>1000	Continue normal operation. Paper condition is normal.
9-6-2019	>1000	Continue normal operation. Paper mechanical condition is normal.
10-19-2020	>1000	Continue normal operation. Paper mechanical condition is normal.
10-6-2021	>1000	Continue normal operation. Paper mechanical condition is normal.
10-12-2022	>1000	Continue normal operation. Paper condition is normal.
11-23-2023	>1000	Arcing is indicated. Continue normal operation. Paper condition is normal.
3-28-2025	>1000	Continue normal operation. Paper condition is normal.
4-7-2026	>1000	Continue normal operation. Paper mechanical condition is normal.

Table B-2
TJ|H2b Transformer Condition Assessment History – Power Transformer LBK-T1

Date	Estimated DP	Comments
5-15-2014	809	Record fluid temperatures to obtain complete diagnostic information. Continue normal operation. Paper condition is normal.
5-20-2015	704-748	Continue normal operation. Paper strength is reduced to approximately 70% tensile strength.
6-1-2016	750	Continue normal operation. Paper strength is reduced to approximately 70% tensile strength.
5-30-2017	793	Continue normal operation. Paper strength is reduced to approximately 70% tensile strength.
6-13-2018	867	Continue normal operation. Paper condition is normal.
10-10-2018	838	Continue normal operation. Paper condition is normal.
4-9-2019	852	Continue normal operation. Paper mechanical condition is normal.
10-17-2019	838	Continue normal operation. Paper mechanical condition is normal.
5-14-2020	838	Continue normal operation. Paper condition is normal.
10-5-2020	839	Continue normal operation. Paper mechanical condition is normal.
4-12-2021	839	Continue normal operation. Paper mechanical condition is normal.
10-19-2021	845	Continue normal operation. Paper mechanical condition is normal.
6-1-2022	764-845	Paper condition is normal. Continue normal operation.
10-13-2022	852	Paper condition is normal. Continue normal operation.
4-21-2023	865	Paper condition is normal. Continue normal operation.
11-2-2023	858	Paper condition is normal. Continue normal operation.
4-11-2024	838	Paper condition is normal. Continue normal operation.
4-12-2024	856	Paper condition is normal. Continue normal operation.
10-22-2024	835	Paper condition is normal. Continue normal operation.
4-23-2025	840	Paper condition is normal. Continue normal operation.
11-17-2025	841	Arcing is indicated. Paper condition is normal. Continue normal operation.
3-25-2026	864	Paper condition is normal. Continue normal operation.
5-15-2026	845	Paper condition is normal. Continue normal operation.

Table B-3
TJ|H2b Transformer Condition Assessment History – Power Transformer HAR-T1

Date	Estimated DP	Comments
5-1-2015	>1000	Continue normal operation. Paper condition is normal.
8-24-2015	920	Continue normal operation. Paper condition is normal.
8-15-2016	>1000	Continue normal operation. Paper condition is normal.
9-14-2017	>1000	Continue normal operation. Paper condition is normal.
8-23-2018	>1000	Continue normal operation. Paper condition is normal.
10-9-2019	>1000	Continue normal operation. Paper mechanical condition is normal.
4-29-2020	>1000	Continue normal operation. Paper mechanical condition is normal.
12-8-2020	>1000	Continue normal operation. Paper mechanical condition is normal.
6-8-2021	>1000	Continue normal operation. Paper mechanical condition is normal.
11-22-2021	>1000	Continue normal operation. Paper mechanical condition is normal.
12-14-2021	>1000	Continue normal operation. Paper condition is normal.
8-4-2022	>1000	Continue normal operation. Paper condition is normal.
3-6-2023	>1000	Continue normal operation. Paper condition is normal.
10-26-2023	>1000	Continue normal operation. Paper condition is normal.
4-11-2024	>1000	Continue normal operation. Paper condition is normal.
10-22-2024	>1000	Continue normal operation. Paper condition is normal.
4-23-2025	>1000	Continue normal operation. Paper condition is normal.
11-3-2025	>1000	Continue normal operation. Heating is indicated. Paper condition is normal.
4-23-2026	>1000	Continue normal operation. Heating at higher temperatures is indicated. Paper condition is normal.

Table B-4
TJ|H2b Transformer Condition Assessment History – Power Transformer RRD-T3

Date	Estimated DP	Comments
5-15-2014	596-624	Continue normal operation. Paper strength is reduced to approximately 50% tensile strength.
5-19-2015	593-611	Continue normal operation. Paper strength is reduced to approximately 60% tensile strength.
5-27-2016	601	Continue normal operation. Paper strength is reduced to approximately 60% tensile strength.
6-9-2017	702	Continue normal operation. Paper strength is reduced to approximately 70% tensile strength.
6-12-2018	728	Continue normal operation. Paper condition is normal.
6-10-2019	679	Continue normal operation. Paper strength is reduced to approximately 70% tensile strength.
7-8-2020	688	Continue normal operation. Paper strength is reduced to approximately 70% tensile strength.
8-17-2021	695-700	Continue normal operation. Paper condition is normal.
9-9-2022	694	Continue normal operation. Paper condition is normal.
11-10-2023	692	Continue normal operation. Paper strength is reduced to approximately 70% tensile strength.
1-29-2025	661	Continue normal operation. Paper strength is reduced to approximately 70% tensile strength.
4-24-2026	682	Continue normal operation. Paper strength is reduced to approximately 70% tensile strength.