Q. (Reference 2027 Capital Budget Overview and Schedule B)

Several programs in the 2027 Capital Budget, including Rebuild Distribution Lines, Reconstruction, Replacement Transformers, and Replacements Due to In-Service Failures, are justified in whole or in part by the age and deterioration of NP's assets.

a) For each major asset class (wood poles, distribution transformers, power transformers, overhead conductor, underground cable, breakers and reclosers, and street lighting fixtures), please provide in working Microsoft Excel format the number of units currently in service by age band (0–5, 6–10, 11–15, 16–20, 21–30, 31–40, 41–50, 51+ years).

b) For each of the past ten years, please provide the number of in-service failures by asset class and by the same age bands, including the age of each failed unit at the time of failure, in a format permitting the calculation of a failure rate (failures per unit in service) by age band.

c) For each asset class, please provide the age at replacement of units replaced in each of the past ten years, distinguishing between (i) replacements due to in-service failure and (ii) planned or condition-based replacements.

d) Please provide any hazard-rate, survivor-curve, or other analysis NP has performed correlating asset age or condition with failure probability. Where no such analysis exists for an asset class, please state so explicitly.

A a) Newfoundland Power maintains asset age information for specific types of equipment including distribution wooden support structures, distribution overhead conductor, transmission wooden support structures, transmission overhead conductor, hydro plants,[1] substation power transformers,[2] breakers, and reclosers.[3] The age distribution for these items, categorized by the age bands as filed within the *2027 Capital Budget Application* is provided in Attachment A.

b) Newfoundland Power does not maintain failure data in a format that permits reporting by asset class and age band as requested. Sorting through the large data sets required to identify the age of failed assets and compile in-service failures by asset class would require significant manual review and analysis. This work could not be reasonably completed in the time allotted for response and, in some cases, the requested information is not available.

c) See part b).

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1 See the *2027 Capital Budget Application, 2027-2031 Capital Plan*, pages 8-13 for additional information on the ages of distribution wooden support structures, distribution overhead conductor, transmission wooden support structures, transmission overhead conductor, and hydro plants.

2 See the *2027 Capital Budget Application*, report *2.2 Substation Power Transformer Strategy*, page 3 for additional information on the age of power transformers.

3 See *2027 Capital Budget Application*, report *2.1 Substation Refurbishment and Modernization*, pages 6-7 for additional information on the ages of breakers and reclosers.

d) A survivor curve was presented in the *2019 Depreciation Study* to determine the average service life of existing assets for financial use only. Newfoundland Power does not currently employ formal, asset-class-specific hazard-rate or survivor-curve models to correlate asset age or condition with failure probability across its asset base. The Company relies primarily on its risk matrix methodology, supported by information from inspections, condition assessments and reliability performance to assess the probability and consequences of asset failure.[4]

[4] See the *2027 Capital Budget Application, 2027 Capital Budget Overview*, Appendix C for additional information on Newfoundland Power's risk matrix methodology.

ATTACHMENT A:

Age Data by Asset Type

Transmission Wood Structures	
Age	Count
0-4	3,673
5-9	2,714
10-14	2,209
15-19	2,486
20-24	2,316
25-29	1,118
30-34	821
35-39	976
40-44	2,424
45-49	3,860
50-54	3,117
55-59	1,345
60+	511

Distribution Wood Structures	
Age	Count
0-4	12,400
5-9	13,992
10-14	15,869
15-19	18,373
20-24	17,781
25-29	12,792
30-34	17,488
35-39	23,236
40-44	19,499
45-49	20,728
50-54	18,640
55-59	25,223
60+	10,753

Breakers	
Age	Count
0-9	142
10-19	160
20-29	32
30-39	6
40-49	19
50-59	21
>60	1

Power Transformers				
Age	Distribution	Generation	System	Total
0-4	4	1	0	5
5-9	8	3	1	12
10-14	9	1	1	11
15-19	3	3	0	6
20-24	3	7	1	11
25-29	0	1	0	1
30-34	2	0	0	2
35-39	11	2	0	13
40-44	3	2	1	6
45-49	11	0	2	13
50-54	51	3	4	58
55-59	23	3	3	29
60-64	10	6	0	16
65-69	1	2	0	3
70+	1	3	1	5

Transmission Overhead Conductor	
Age	Count
0-4	186
5-9	176
10-14	112
15-19	156
20-24	113
25-29	31
30-34	83
35-39	65
40-44	181
45-49	467
50-54	226
55-62	273
63+	47

Distribution Overhead Conductor	
Age	Count
0-4	1,428
5-9	635
10-14	620
15-19	629
20-24	641
25-29	503
30-34	429
35-39	711
40-44	608
45-49	931
50-54	815
55-59	1,131
60+	728

Reclosers	
Age	Count
0-4	8
5-9	53
10-14	57
15-19	23
20-24	27
25-29	12
30-34	0

Hydro Plants	
Age	Count
0-24	0
25-49	2
50-74	7
75-99	9
100+	5