

2025 Transmission Component Forced Outages

Equipment Reliability Information System

ANNUAL REPORT

2.1 Inventory

Table 1 below is a summary of the inventory at December 31, 2025 by voltage classification based on data supplied by all contributors.

Table 1 - Inventory of Transmission Equipment as of December 31, 2025

Voltage Classification	Transmission Lines Length (Km)	Transmission Lines Primary Terminals	Transmission Lines Tap Terminals	Transformer Banks	Circuit Breakers
Up to 109 kV	12,924	579	484	893	922
110 - 149 kV	33,302	1,511	740	1,065	2,186
150 - 199 kV	0	0	0		11
200 - 299 kV	36,249	1,304	410	912	2,133
300 - 399 kV	2,442	23	1	9	22
500 - 599 kV	12,754	191	22	121	429

Voltage Classification	Cables Length (Km)	Cables Terminals	Synchronous Compensators	Static Compensators
Up to 109 kV	38	36	31	9
110 - 149 kV	222	57	2	1
200 - 299 kV	83	27		2
300 - 399 kV				
500 - 599 kV				

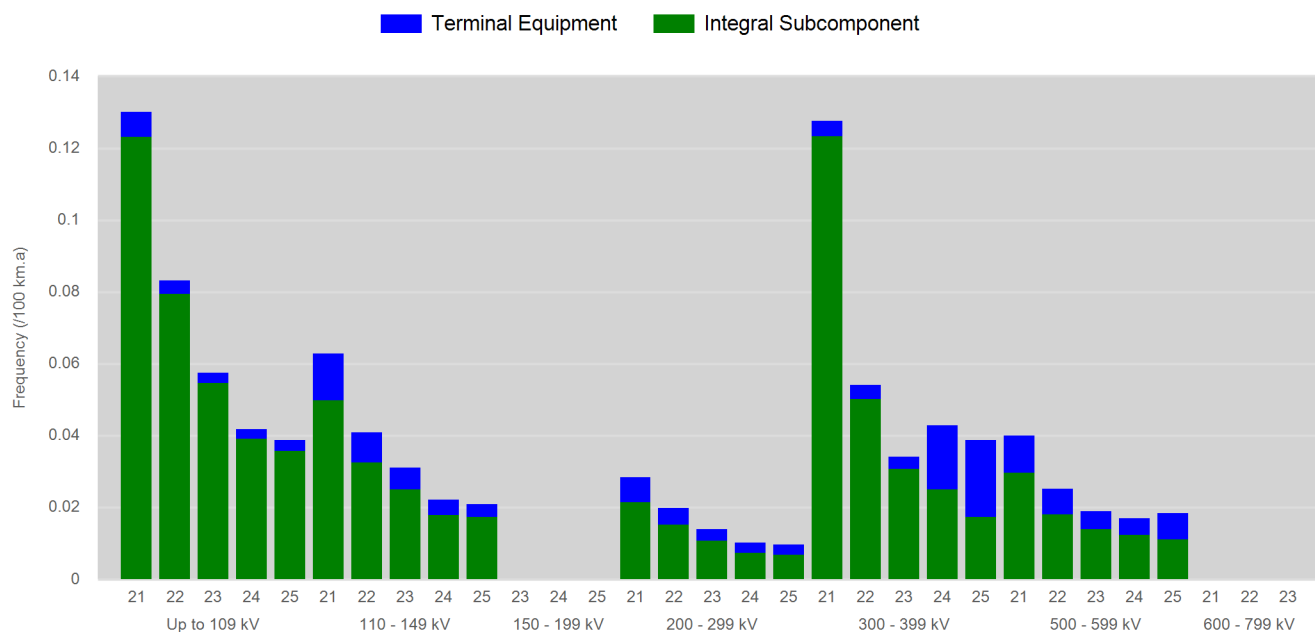
Voltage Classification	Shunt Reactor Banks	Shunt Capacitor Banks	Series Capacitor Banks
Up to 109 kV	93	46	
110 - 149 kV	20	116	
150 - 199 kV			
200 - 299 kV	37	62	2
300 - 399 kV	6		
500 - 599 kV	90		21
600 - 799 kV			

2.2 Transmission Line Performance

The transmission line performance statistics are given on a per 100 kilometre-year basis for line-related outages and on a per terminal-year basis for terminal-related outages. Tables 2, 3 and 4 below summarize the more detailed listings in Appendix A for line-related and terminal-related forced outages.

Table 2 - Summary of Transmission Line Statistics for Line-Related Sustained Forced Outages

Voltage Classification	Kilometre Years (Km.a)	Number of Outages	Total Time (h)	Frequency (Per 100 Km.a)	Mean Duration	Unavailability (%)
Up to 109 kV	62,275	1,992	49,994	3.1987	25.1	0.916
110 - 149 kV	137,808	1,664	123,380	1.2075	74.1	1.022
150 - 199 kV	0	0	0	0.0000	0.0	0.000
200 - 299 kV	152,826	629	20,425	0.4116	32.5	0.153
300 - 399 kV	5,294	7	577	0.1322	82.4	0.124
500 - 599 kV	56,113	182	3,981	0.3243	21.9	0.081



Frequency of line-related sustained outages of transmission lines - 5 year trend by voltage classification.

(NB: Year represents 5 year composite average up to and including that year)

Table 3 - Summary of Transmission Line Statistics for Line-Related Transient Forced Outages

Voltage Classification	Kilometre Years (Km.a)	Number of Outages	Frequency (Per 100 Km.a)	Unavailability
Up to 109 kV	62,275	2,032	3.2630	0.000
110 - 149 kV	137,808	1,581	1.1472	0.000
150 - 199 kV	0	0	0.0000	0.000
200 - 299 kV	152,826	523	0.3422	0.000
300 - 399 kV	5,294	1	0.0189	0.000
500 - 599 kV	56,113	350	0.6237	0.000

Table 4 - Summary of Transmission Line Statistics for Terminal-Related Forced Outages

Primary Terminals

Voltage Classification	Terminal Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability (%)
Up to 109 kV	2,634.5	208	2,875	0.0790	13.8	0.013
110 - 149 kV	5,368.7	826	32,740	0.1539	39.6	0.070
150 - 199 kV	0.0	0	0	0.0000	0.0	0.000
200 - 299 kV	5,314.0	449	26,854	0.0845	59.8	0.058
300 - 399 kV	87.0	36	360	0.4138	10.0	0.047
500 - 599 kV	858.9	137	8,021	0.1595	58.5	0.107

Tap Terminals

Voltage Classification	Terminal Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability (%)
Up to 109 kV	2,320.6	22	813	0.0095	37.0	0.004
110 - 149 kV	3,382.3	18	4,271	0.0053	237.3	0.014
150 - 199 kV	0.0	0	0	0.0000	0.0	0.000
200 - 299 kV	1,985.2	7	248	0.0035	35.4	0.001
300 - 399 kV	1.0	0	0	0.0000	0.0	0.000
500 - 599 kV	106.0	0	0	0.0000	0.0	0.000

2.3 Transformer Bank Performance

Transformer Bank performance statistics are shown by voltage classification and three-phase rating. The voltage classification refers to the system operating voltage at the high-voltage-side of the transformer. The three-phase rating is the MVA rating with all cooling equipment in operation. Tables 5, 6 and 7 below summarize the more detailed listings in Appendix B.

Table 5 - Summary of Transformer Bank Statistics by Voltage Classification for Forced Outages Involving Integral Subcomponents

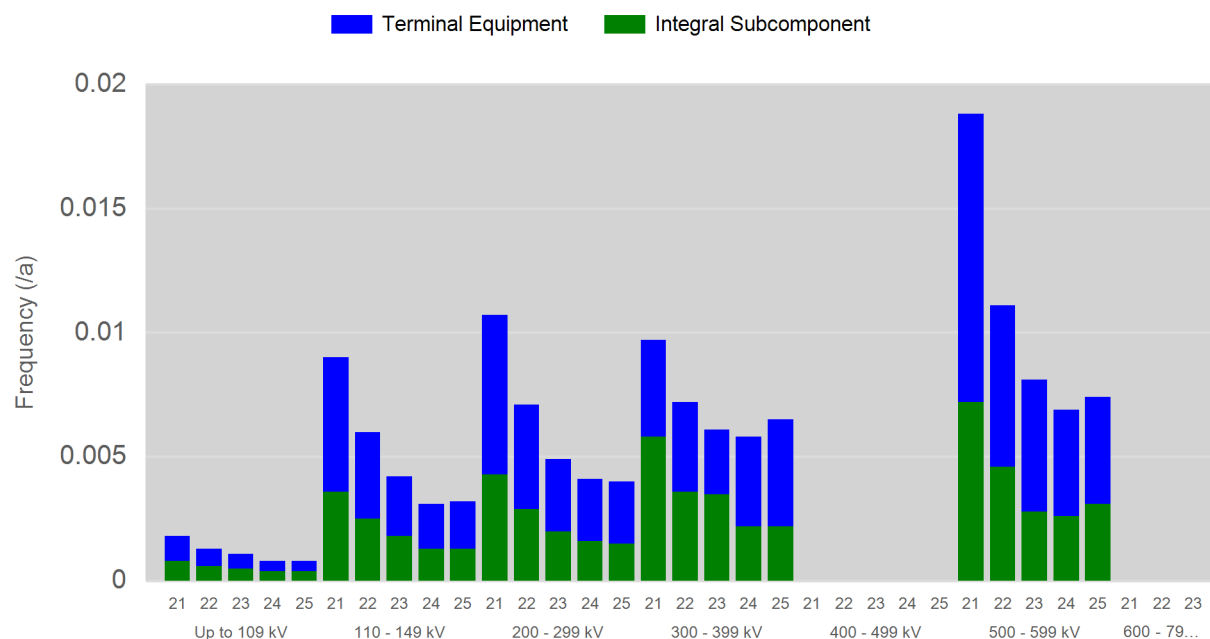
Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavail - ability
Up to 109 kV	3,766	56	21,456	0.0149	383.1	0.065
110 - 149 kV	3,518	207	53,932	0.0588	260.5	0.175
200 - 299 kV	4,084	200	32,420	0.0490	162.1	0.091
300 - 399 kV	45	3	806	0.0673	268.8	0.206
500 - 599 kV	466	44	8,118	0.0944	184.5	0.199

Table 6 - Summary of Transformer Bank Statistics by Voltage Classification for Forced Outages Involving Terminal Equipment

Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavail ability
Up to 109 kV	3,766	90	11,033	0.0239	122.6	0.033
110 - 149 kV	3,518	337	38,259	0.0958	113.5	0.124
200 - 299 kV	4,084	320	51,706	0.0784	161.6	0.145
300 - 399 kV	45	4	5,634	0.0897	1,408.6	1.442
500 - 599 kV	466	97	38,060	0.2081	392.4	0.932

Table 7 - Summary of Transformer Bank Statistics by Voltage Classification for Forced Outages Involving Integral Subcomponents and Terminal Equipment

Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability
Up to 109 kV	3,766	146	32,489	0.0388	222.5	0.099
110 - 149 kV	3,518	544	92,191	0.1546	169.5	0.299
200 - 299 kV	4,084	520	84,126	0.1273	161.8	0.235
300 - 399 kV	45	7	6,441	0.1570	920.1	1.649
500 - 599 kV	466	141	46,178	0.3025	327.5	1.131



Frequency of outages of transformer banks - 5 year trend by voltage classification.

(NB: Year represents 5 year composite average up to and including that year)

2.4 Circuit Breaker Performance

Circuit Breakers are grouped by interrupting medium within each voltage classification. A summary of listings in Appendix C is given below in Tables 8, 9 and 10.

Table 8 - Summary of Circuit Breaker Statistics by Voltage Classification for Forced Outages Involving Integral Subcomponents

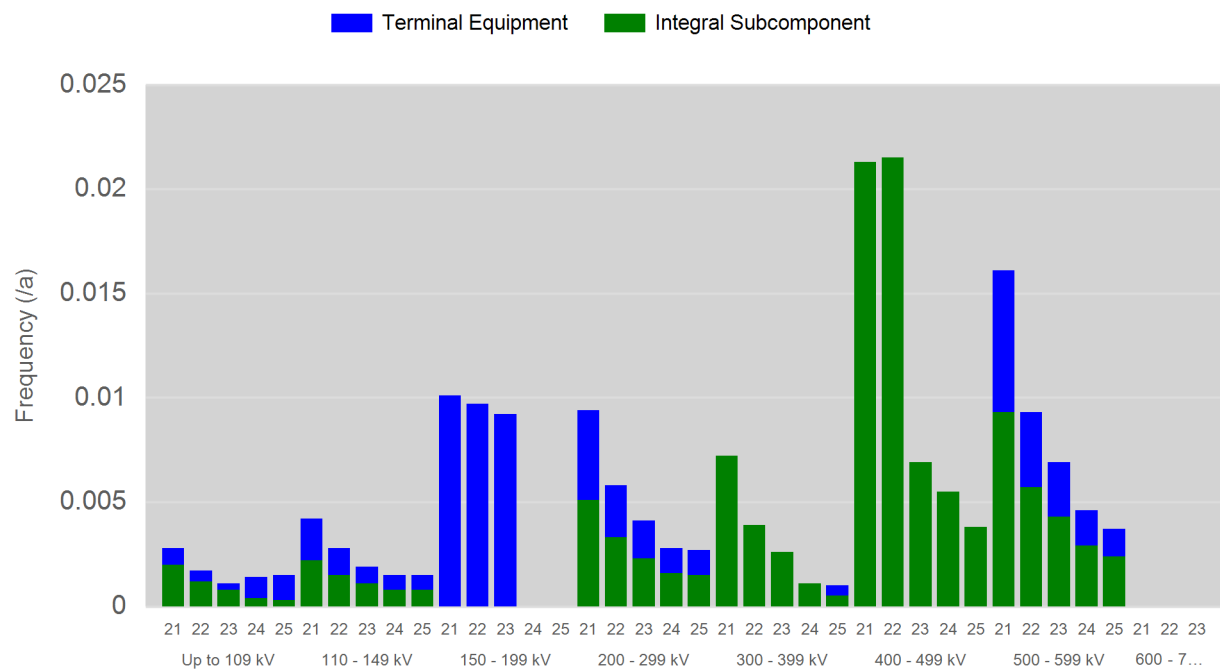
Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavail ability
Up to 109 kV	5,865	62	10,416	0.0106	168.0	0.020
110 - 149 kV	8,896	226	115,421	0.0254	510.7	0.148
150 - 199 kV	55	6	953	0.1091	158.9	0.198
200 - 299 kV	10,121	378	206,083	0.0373	545.2	0.232
300 - 399 kV	201	2	23	0.0100	11.7	0.001
500 - 599 kV	2,279	135	33,642	0.0592	249.2	0.168

Table 9 - Summary of Circuit Breaker Statistics by Voltage Classification for Forced Outages Involving Terminal Equipment

Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavail ability
Up to 109 kV	5,865	91	5,025	0.0155	55.2	0.010
110 - 149 kV	8,896	194	48,869	0.0218	251.9	0.063
150 - 199 kV	55	1	19	0.0182	18.7	0.004
200 - 299 kV	10,121	293	158,133	0.0289	539.7	0.178
300 - 399 kV	201	1	1	0.0050	0.7	0.000
500 - 599 kV	2,279	84	29,752	0.0369	354.2	0.149

Table 10 - Summary of Circuit Breaker Statistics by Voltage Classification for Forced Outages Involving Integral Subcomponents and Terminal Equipment

Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavail ability
Up to 109 kV	5,865	153	15,442	0.0261	100.9	0.030
110 - 149 kV	8,896	419	164,220	0.0471	391.9	0.211
150 - 199 kV	55	7	972	0.1273	138.9	0.202
200 - 299 kV	10,121	671	364,216	0.0663	542.8	0.411
300 - 399 kV	201	3	24	0.0150	8.1	0.001
500 - 599 kV	2,279	219	63,394	0.0961	289.5	0.318



Frequency of outages of circuit breaker - 5 year trend by voltage classification.

(NB: Year represents 5 year composite average up to and including that year)

2.5 Cable Performance

Tables 11 and 12 show a summary of cable performance by voltage classification. More details are given in the listing in Appendix D.

Table 11 - Summary of Cable Statistics for Cable-Related Forced Outages by Voltage Classification

Voltage Classification	Kilometre Years (Km.a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability (%)
Up to 109 kV	179	9	458	0.0503	50.9	2.924
110 - 149 kV	1,165	10	5,816	0.0086	581.6	5.699
200 - 299 kV	399	8	289	0.0201	36.1	0.826
500 - 599 kV	74	0	0	0.0000	0.0	0.000

Table 12 - Summary of Cable Statistics for Terminal-Related Forced Outages by Voltage Classification

Voltage Classification	Terminal Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability (%)
Up to 109 kV	192.0	8	833	0.0417	104.1	0.050
110 - 149 kV	298.0	41	8,552	0.1376	208.6	0.328
200 - 299 kV	118.0	5	431	0.0424	86.1	0.042
500 - 599 kV	0.0	0	0	0.0000	0.0	0.000

2.6 Synchronous Compensator Performance

Table 13 below shows the Synchronous Compensator performance statistics. The values in this table came from the listing in Appendix E.

Table 13 - Summary of Synchronous Compensator Statistics by Voltage Classification for All Integral Subcomponents and Terminal Equipment

Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability
All Integral Subcomponents						
Up to 109 kV	149.7	33	32,764	0.2205	992.9	2.499
110 - 149 kV	2.0	0	0	0.0000	0.0	0.000
All Terminal Equipment						
Up to 109 kV	149.7	102	11,743	0.6814	115.1	0.896
110 - 149 kV	2.0	21	1,791	10.5290	85.3	10.252

2.7 Static Compensator Performance

Table 14 below shows the Static Compensator performance statistics by voltage classification. The values in this table came from the listing in Appendix F.

Table 14 - Summary of Static Compensator Statistics by Voltage Classification for All Integral Subcomponents and Terminal Equipment

Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability
All Integral Subcomponents						
Up to 109 kV	41.0	22	5,485	0.5366	249.3	1.527
110 - 149 kV	1.0	41	1,203	41.1110	29.3	13.769
200 - 299 kV	2.0	14	3,696	7.0193	264.0	21.154
All Terminal Equipment						
Up to 109 kV	41.0	26	2,129	0.6342	81.9	0.593
110 - 149 kV	1.0	34	6,570	34.0920	193.2	75.200
200 - 299 kV	2.0	19	1,838	9.5262	96.7	10.521

2.8 Shunt Reactor Bank Performance

Table 15 below shows the Shunt Reactor Bank Statistics by voltage classification. The values in this table came from the listing in Appendix G.

Table 15 - Summary of Shunt Reactor Bank Statistics by Voltage Classification for All Integral Subcomponents and Terminal Equipment

Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability
All Integral Subcomponents						
Up to 109 kV	211.9	30	31,471	0.1416	1,049.0	1.696
110 - 149 kV	77.7	2	726	0.0257	363.2	0.107
200 - 299 kV	162.0	12	8,647	0.0741	720.6	0.61
300 - 399 kV	11.0	0	0	0.0000	0.0	0
500 - 599 kV	378.8	25	6,793	0.0660	271.7	0.205
All Terminal Equipment						
Up to 109 kV	211.9	42	42,004	0.1982	1,000.1	2.263
110 - 149 kV	77.7	11	1,790	0.1416	162.7	0.263
200 - 299 kV	162.0	15	1,497	0.0926	99.8	0.105
300 - 399 kV	11.0	0	0	0.0000	0.0	0
500 - 599 kV	378.8	25	5,519	0.0660	220.8	0.166

2.9 Shunt Capacitor Bank Performance

Table 16 below shows the Shunt Capacitor Bank performance statistics by voltage classification. The values in this table came from the listing in Appendix H.

Table 16 - Summary of Shunt Capacitor Bank Statistics by Voltage Classification for All Integral Subcomponents and Terminal Equipment

Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability
All Integral Subcomponents						
Up to 109 kV	230.0	6	2,030	0.0261	338.4	0.101
110 - 149 kV	327.9	14	16,291	0.0427	1,163.6	0.567
200 - 299 kV	268.6	47	38,228	0.1750	813.4	1.625
All Terminal Equipment						
Up to 109 kV	230.0	4	3,723	0.0174	930.7	0.185
110 - 149 kV	327.9	28	21,586	0.0854	770.9	0.752
200 - 299 kV	268.6	49	45,174	0.1824	921.9	1.920

2.10 Series Capacitor Bank Performance

Table 17 below shows the Series Capacitor Bank performance statistics by voltage classification. The values in this table came from the listing in Appendix I.

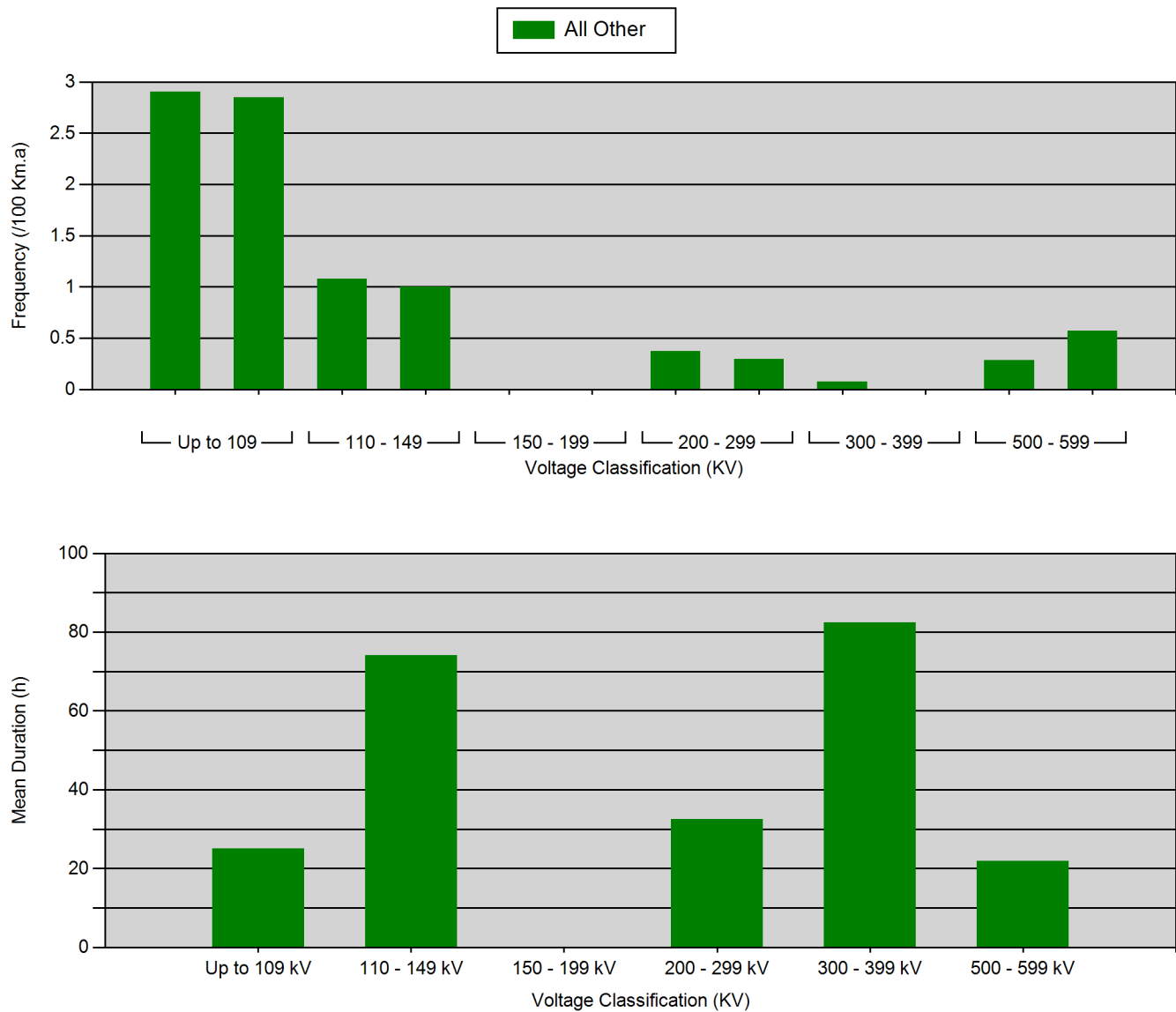
Table 17 - Summary of Series Capacitor Bank Statistics by Voltage Classification for All Integral Subcomponents and Terminal Equipment

Voltage Classification	Component Years (a)	Number of Outages	Total Time (h)	Frequency (Per a)	Mean Duration (h)	Unavailability
All Integral Subcomponents						
200 - 299 kV	2.0	0	0	0.0000	0.0	0.000
500 - 599 kV	105.0	58	20,606	0.5524	355.3	2.240
All Terminal Equipment						
200 - 299 kV	2.0	0	0	0.0000	0.0	0.000
500 - 599 kV	105.0	34	25,963	0.3238	763.6	2.823

Below are the titles of the transmission line performance statistics listings contained in this appendix:

- TA-RP10: Transmission Line Analysis by Subcomponent for Line-Related Sustained Forced Outages
- TA-RP14: Transmission Line Analysis by Subcomponent for Line-Related Transient Forced Outages
- TA-RP11: Transmission Line Analysis by Subcomponent for Terminal-Related Forced Outages
- TA-RP12: Transmission Line Analysis by Primary Cause for Line-Related Sustained Forced Outages
- TA-RP15: Transmission Line Analysis by Primary Cause for Line-Related Transient Forced Outages
- TA-RP13: Transmission Line Analysis by Primary Cause for Terminal-Related Forced Outages

Readers should note that when no outages are attributed to a subcomponent or primary cause, the columns for related statistics are left blank.



Mean Duration of line-related sustained forced outages of transmission lines by voltage classification.

Transmission Line Analysis by Subcomponent for Line-Related Sustained Forced Outages



Frequency of line-related sustained forced outages of Up to 109 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILABILITY (%)
Wood, Single Pole	56,667							
		Other	9	0.0159	42	4.7	0.67	0.001
		Structure	209	0.3688	13,333	63.8	9.45	0.269
		Joints And Dead-ends	23	0.0406	2,360	102.6	5.20	0.048
		Conductor	256	0.4518	5,148	20.1	6.92	0.104
		Insulation System	932	1.6447	28,139	30.2	1.02	0.567
		Ground Wire	8	0.0141	38	4.8	3.42	0.001
		Hardware	11	0.0194	126	11.5	3.20	0.003
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	1,448	2.5553	49,186	34.0	3.39	0.991

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Wood, Double Pole	2,126							
		Other	1	0.0470	3	3.0	3.00	0.002
		Structure	2	0.0941	9	4.6	4.55	0.005
		Joints And Dead-ends	0		0			
		Conductor	5	0.2352	29	5.8	4.90	0.016
		Insulation System	11	0.5174	36	3.3	1.53	0.020
		Ground Wire	1	0.0470	0	0.0	0.02	0.000
		Hardware	1	0.0470	3	3.1	3.05	0.002
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	21	0.9877	80	3.8	3.42	0.043

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

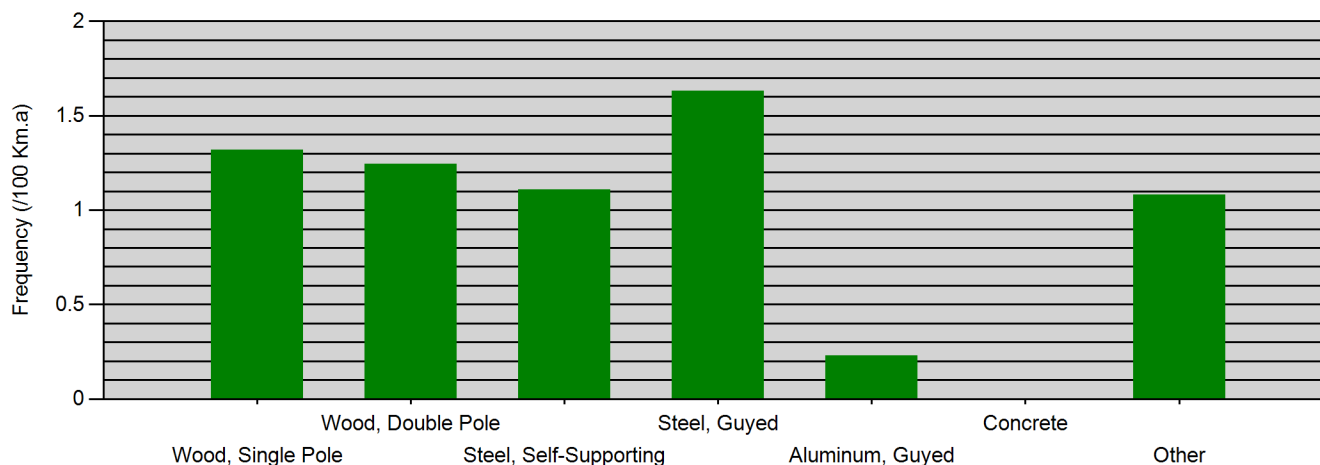
SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Steel, Self- Supporting	1,206							
		Other	0		0			
		Structure	3	0.2488	33	11.1	9.52	0.032
		Joints And Dead-ends	1	0.0829	5	4.8	4.83	0.005
		Conductor	5	0.4146	80	16.0	22.77	0.076
		Insulation System	514	42.6218	609	1.2	0.02	0.576
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	523	43.3681	727	1.4	0.02	0.688

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
All Supporting Structures	59,999							
		Other	10	0.0167	45	4.5	1.60	0.001
		Structure	214	0.3567	13,376	62.5	9.45	0.255
		Joints And Dead-ends	24	0.0400	2,365	98.5	5.03	0.045
		Conductor	266	0.4433	5,257	19.8	6.92	0.100
		Insulation System	1457	2.4284	28,784	19.8	0.05	0.548
		Ground Wire	9	0.0150	38	4.3	3.08	0.001
		Hardware	12	0.0200	129	10.8	3.13	0.003
		Auxiliary Equipment	0		0			



Frequency of line-related sustained forced outages of 110 - 149 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Wood, Single Pole	37,791	Other	14	0.0370	442	31.6	3.55	0.013
		Structure	87	0.2302	19,175	220.4	23.85	0.579
		Joints And Dead-ends	2	0.0053	11	5.7	5.71	0.000
		Conductor	204	0.5398	3,214	15.8	0.09	0.097
		Insulation System	113	0.2990	6,492	57.5	6.43	0.196
		Ground Wire	8	0.0212	95	11.8	8.22	0.003
		Hardware	83	0.2196	1,260	15.2	0.08	0.038
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	511	1.3521	30,689	60.1	1.03	0.927

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Wood, Double Pole	28,433							
		Other	15	0.0528	110	7.3	2.40	0.004
		Structure	42	0.1477	13,094	311.8	23.71	0.526
		Joints And Dead-ends	14	0.0492	469	33.5	10.27	0.019
		Conductor	74	0.2603	1,611	21.8	10.57	0.065
		Insulation System	194	0.6823	9,861	50.8	3.01	0.396
		Ground Wire	4	0.0141	55	13.9	12.02	0.002
		Hardware	11	0.0387	1,575	143.2	0.15	0.063
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	354	1.2451	26,775	75.6	6.88	1.075

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Steel, Self- Supporting	39,844							
		Other	3	0.0075	18	5.9	0.58	0.001
		Structure	21	0.0527	44,424	2,115.5	29.22	1.273
		Joints And Dead-ends	0		0			
		Conductor	28	0.0703	791	28.2	1.46	0.023
		Insulation System	372	0.9336	3,247	8.7	0.05	0.093
		Ground Wire	3	0.0075	47	15.6	16.72	0.001
		Hardware	16	0.0402	119	7.4	1.32	0.003
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	443	1.1118	48,646	109.8	0.07	1.394

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Steel, Guyed	6,256	Other	0		0			
		Structure	9	0.1439	14,665	1,629.5	856.45	2.676
		Joints And Dead-ends	0		0			
		Conductor	1	0.0160	47	47.0	46.98	0.009
		Insulation System	92	1.4705	105	1.1	0.05	0.019
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	102	1.6304	14,817	145.3	0.05	2.704

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Aluminum, Guyed	1,300	Other	0		0			
		Structure	1	0.0769	7	7.4	7.42	0.007
		Joints And Dead-ends	2	0.1538	22	11.2	11.23	0.020
		Conductor	0		0			
		Insulation System	0		0			
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	3	0.2307	29	10.0	7.42	0.026

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Concrete	9							
		Other	0		0			
		Structure	0		0			
		Joints And Dead-ends	0		0			
		Conductor	0		0			
		Insulation System	0		0			
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	0		0	0.0		

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

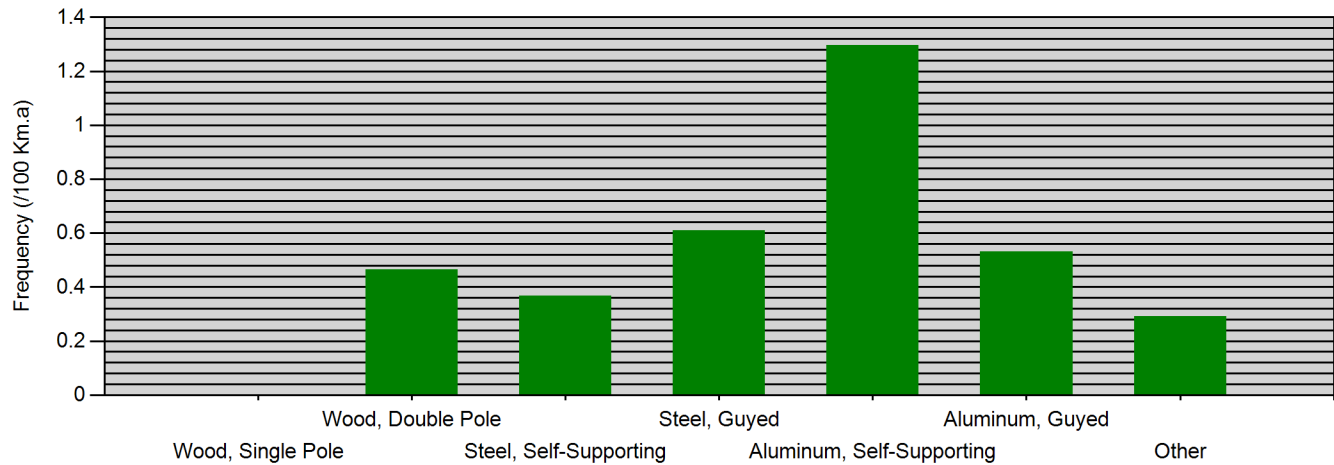
SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Other	23,146							
		Other	0		0			
		Structure	27	0.1167	837	31.0	20.22	0.041
		Joints And Dead-ends	1	0.0043	24	23.7	23.67	0.001
		Conductor	23	0.0994	96	4.2	0.43	0.005
		Insulation System	192	0.8295	1,044	5.4	0.12	0.052
		Ground Wire	6	0.0259	224	37.3	16.45	0.011
		Hardware	1	0.0043	195	194.7	194.68	0.010
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	250	1.0801	2,420	9.7	0.17	0.119

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
All Supporting Structures	136,780							
		Other	32	0.0234	570	17.8	2.74	0.005
		Structure	187	0.1367	92,202	493.1	24.02	0.770
		Joints And Dead-ends	19	0.0139	527	27.7	11.18	0.004
		Conductor	330	0.2413	5,759	17.5	0.31	0.048
		Insulation System	963	0.7040	20,749	21.5	0.10	0.173
		Ground Wire	21	0.0154	420	20.0	11.65	0.004
		Hardware	111	0.0812	3,149	28.4	0.12	0.026
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	1,663	1.2159	123,376	74.2	0.21	1.030



Frequency of line-related sustained forced outages of 200 - 299 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Wood, Single Pole	285	Other	0		0			
		Structure	0		0			
		Joints And Dead-ends	0		0			
		Conductor	0		0			
		Insulation System	0		0			
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	0		0	0.0		

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Wood, Double Pole	32,615							
		Other	11	0.0337	535	48.7	7.97	0.019
		Structure	16	0.0491	633	39.5	24.17	0.022
		Joints And Dead-ends	2	0.0061	28	14.0	14.03	0.001
		Conductor	23	0.0705	1,061	46.1	8.93	0.037
		Insulation System	98	0.3005	1,331	13.6	0.11	0.047
		Ground Wire	0		0			
		Hardware	2	0.0061	44	22.1	22.12	0.002
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	152	0.4660	3,632	23.9	0.53	0.127

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Steel, Self- Supporting	96,114							
		Other	8	0.0083	436	54.6	27.64	0.005
		Structure	23	0.0239	723	31.4	12.62	0.009
		Joints And Dead-ends	2	0.0021	2	0.8	0.78	0.000
		Conductor	61	0.0635	2,529	41.5	0.13	0.030
		Insulation System	167	0.1738	10,643	63.7	0.18	0.126
		Ground Wire	11	0.0114	383	34.8	16.77	0.005
		Hardware	81	0.0843	502	6.2	0.15	0.006
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	353	0.3673	15,218	43.1	0.30	0.181

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Steel, Guyed	15,252							
		Other	5	0.0328	2	0.4	0.13	0.000
		Structure	5	0.0328	11	2.2	1.95	0.001
		Joints And Dead-ends	3	0.0197	17	5.6	0.87	0.001
		Conductor	2	0.0131	0	0.2	0.17	0.000
		Insulation System	78	0.5114	192	2.5	0.03	0.014
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	93	0.6098	222	2.4	0.05	0.017

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Aluminum, Self- Supporting	386							
		Other	0		0			
		Structure	1	0.2591	32	31.8	31.82	0.094
		Joints And Dead-ends	0		0			
		Conductor	2	0.5181	87	43.6	43.63	0.258
		Insulation System	2	0.5181	0	0.1	0.05	0.000
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	5	1.2953	119	23.8	4.48	0.352

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Aluminum, Guyed	942							
		Other	0		0			
		Structure	0		0			
		Joints And Dead-ends	0		0			
		Conductor	0		0			
		Insulation System	4	0.4248	138	34.5	33.48	0.167
		Ground Wire	1	0.1062	0	0.5	0.47	0.001
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	5	0.5310	138	27.7	29.72	0.168

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

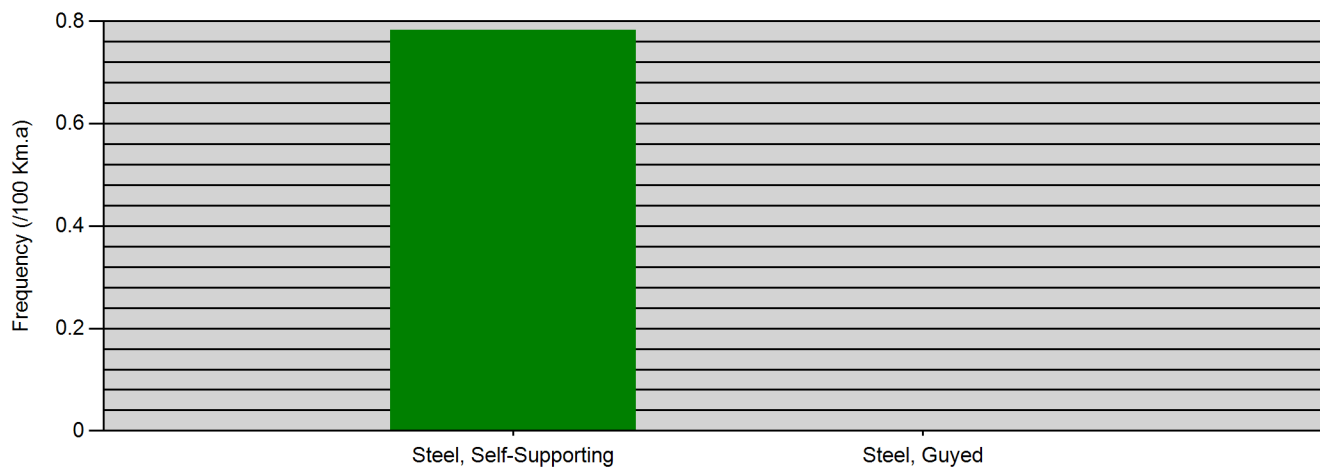
SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Other	7,226							
		Other	0		0			
		Structure	8	0.1107	269	33.7	30.25	0.043
		Joints And Dead-ends	0		0			
		Conductor	0		0			
		Insulation System	10	0.1384	145	14.5	1.27	0.023
		Ground Wire	3	0.0415	680	226.8	52.23	0.108
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	21	0.2906	1,094	52.1	7.83	0.173

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
All Supporting Structures	152,819							
		Other	24	0.0157	974	40.6	7.15	0.007
		Structure	53	0.0347	1,667	31.5	16.30	0.013
		Joints And Dead-ends	7	0.0046	46	6.6	1.50	0.000
		Conductor	88	0.0576	3,677	41.8	1.74	0.028
		Insulation System	359	0.2349	12,450	34.7	0.12	0.093
		Ground Wire	15	0.0098	1,064	70.9	16.77	0.008
		Hardware	83	0.0543	547	6.6	0.17	0.004
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	629	0.4116	20,425	32.5	0.25	0.153



Frequency of line-related sustained forced outages of 300 - 399 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Steel, Self-Supporting	894							
		Other	0		0			
		Structure	1	0.1119	0	0.3	0.30	0.000
		Joints And Dead-ends	0		0			
		Conductor	1	0.1119	17	17.0	17.00	0.022
		Insulation System	5	0.5594	559	111.9	16.85	0.715
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	7	0.7832	576	82.4	16.85	0.737

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

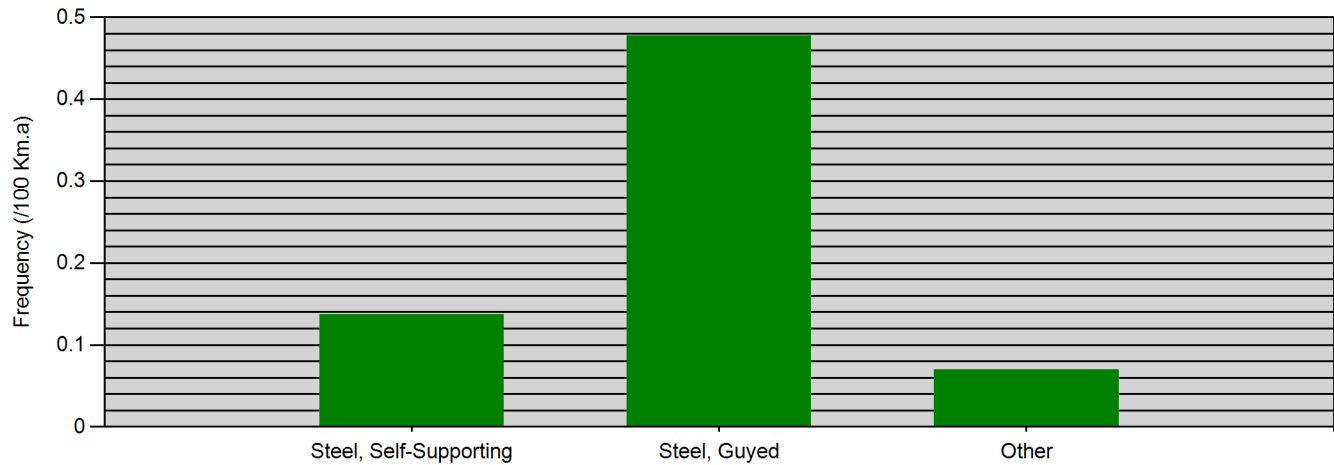
SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Steel, Guyed	4,400							
		Other	0		0			
		Structure	0		0			
		Joints And Dead-ends	0		0			
		Conductor	0		0			
		Insulation System	0		0			
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	0		0	0.0		

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
All Supporting Structures	5,294							
		Other	0		0			
		Structure	1	0.0189	0	0.3	0.30	0.000
		Joints And Dead-ends	0		0			
		Conductor	1	0.0189	17	17.0	17.00	0.004
		Insulation System	5	0.0945	559	111.9	16.85	0.121
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	7	0.1323	576	82.4	16.85	0.124



Frequency of line-related sustained forced outages of 500 - 599 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Steel, Self-Supporting	21,826	Other	2	0.0092	55	27.6	27.60	0.003
		Structure	0		0			
		Joints And Dead-ends	1	0.0046	5	5.2	5.18	0.000
		Conductor	8	0.0367	355	44.3	6.03	0.019
		Insulation System	15	0.0687	176	11.7	7.85	0.009
		Ground Wire	1	0.0046	26	26.4	26.37	0.001
		Hardware	3	0.0137	28	9.2	8.58	0.001
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	30	0.1375	645	21.5	7.86	0.034

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Steel, Guyed	31,417							
		Other	7	0.0223	156	22.3	0.33	0.006
		Structure	2	0.0064	281	140.4	140.41	0.010
		Joints And Dead-ends	2	0.0064	1,037	518.6	518.64	0.038
		Conductor	23	0.0732	721	31.3	0.13	0.026
		Insulation System	113	0.3597	1,099	9.7	0.17	0.040
		Ground Wire	2	0.0064	10	5.1	5.11	0.000
		Hardware	1	0.0032	26	25.5	25.50	0.001
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	150	0.4776	3,330	22.2	0.18	0.121

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Other	2,870							
		Other	0		0			
		Structure	0		0			
		Joints And Dead-ends	0		0			
		Conductor	0		0			
		Insulation System	2	0.0697	7	3.3	3.32	0.003
		Ground Wire	0		0			
		Hardware	0		0			
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	2	0.0697	7	3.3	3.32	0.003

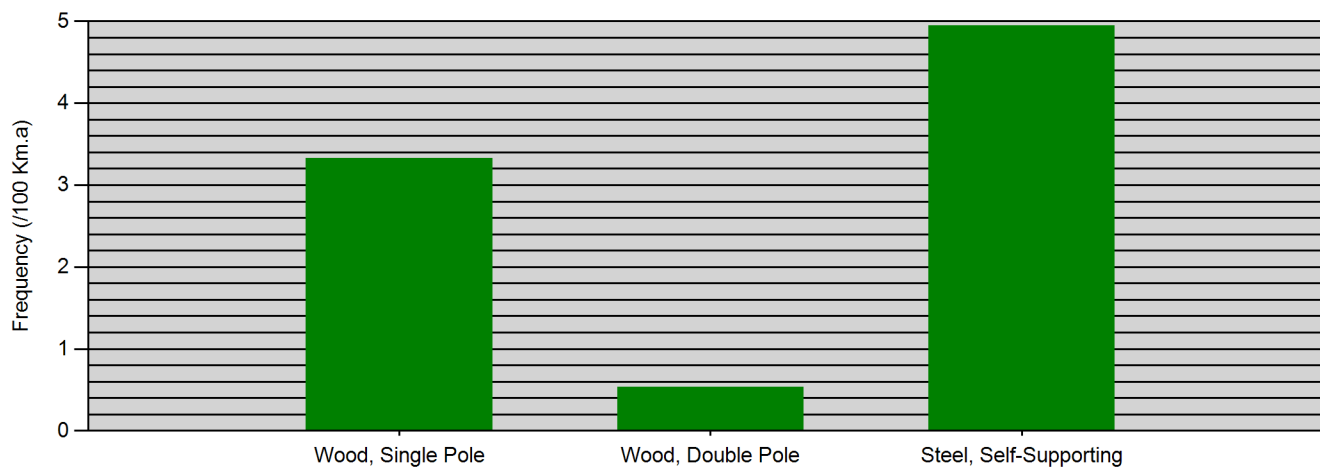
For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
All Supporting Structures	56,113							
		Other	9	0.0160	211	23.5	1.03	0.004
		Structure	2	0.0036	281	140.4	140.41	0.006
		Joints And Dead-ends	3	0.0053	1,042	347.5	5.18	0.021
		Conductor	31	0.0552	1,075	34.7	0.25	0.022
		Insulation System	130	0.2317	1,281	9.9	0.38	0.026
		Ground Wire	3	0.0053	37	12.2	6.98	0.001
		Hardware	4	0.0071	53	13.3	12.59	0.001
		Auxiliary Equipment	0		0			
		All Integral Subcomponents	182	0.3242	3,980	21.9	0.43	0.081

Transmission Line Analysis by Subcomponent for Line-Related Transient Forced Outages



Frequency of line-related sustained forced outages of Up to 109 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Single Pole	56,667			
		Other	3	0.0053
		Structure	33	0.0582
		Joints And Dead-ends	5	0.0088
		Conductor	244	0.4306
		Insulation System	1629	2.8747
		Ground Wire	3	0.0053
		Hardware	16	0.0282
		Auxiliary Equipment	0	
		All Integral Subcomponents	1,933	3.4111

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Double Pole	2,126			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	5	0.2352
		Insulation System	8	0.3763
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	13	0.6115

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

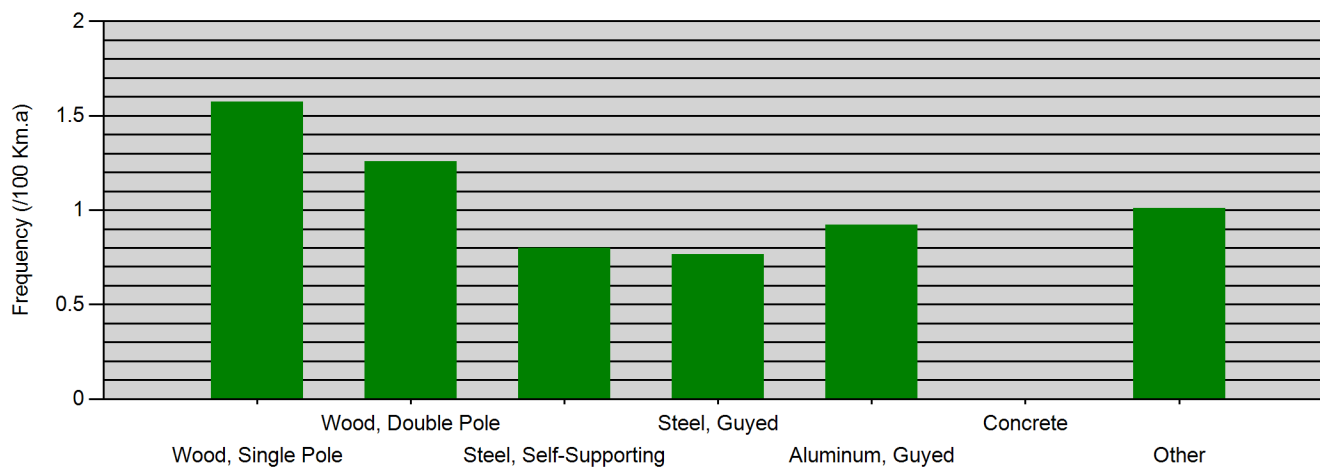
SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self- Supporting	1,206			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	2	0.1658
		Insulation System	84	6.9654
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	86	7.1312

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Supporting Structures	59,999			
		Other	3	0.0050
		Structure	33	0.0550
		Joints And Dead-ends	5	0.0083
		Conductor	251	0.4183
		Insulation System	1721	2.8684
		Ground Wire	3	0.0050
		Hardware	16	0.0267
		Auxiliary Equipment	0	
		All Integral Subcomponents	2,032	3.3867



Frequency of line-related sustained forced outages of 110 - 149 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Single Pole	37,791			
		Other	17	0.0450
		Structure	11	0.0291
		Joints And Dead-ends	2	0.0053
		Conductor	194	0.5133
		Insulation System	291	0.7700
		Ground Wire	9	0.0238
		Hardware	85	0.2249
		Auxiliary Equipment	0	
		All Integral Subcomponents	609	1.6114

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Double Pole	28,433			
		Other	11	0.0387
		Structure	2	0.0070
		Joints And Dead-ends	4	0.0141
		Conductor	100	0.3517
		Insulation System	221	0.7773
		Ground Wire	5	0.0176
		Hardware	15	0.0528
		Auxiliary Equipment	0	
		All Integral Subcomponents	358	1.2592

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self- Supporting	39,844			
		Other	1	0.0025
		Structure	3	0.0075
		Joints And Dead-ends	2	0.0050
		Conductor	32	0.0803
		Insulation System	264	0.6626
		Ground Wire	5	0.0125
		Hardware	13	0.0326
		Auxiliary Equipment	0	
		All Integral Subcomponents	320	0.8030

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Guyed	6,256			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	0	
		Insulation System	48	0.7672
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	48	0.7672

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Aluminum, Guyed	1,300			
		Other	2	0.1538
		Structure	0	
		Joints And Dead-ends	3	0.2308
		Conductor	0	
		Insulation System	7	0.5385
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	12	0.9231

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Concrete	9			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	0	
		Insulation System	0	
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	0	

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

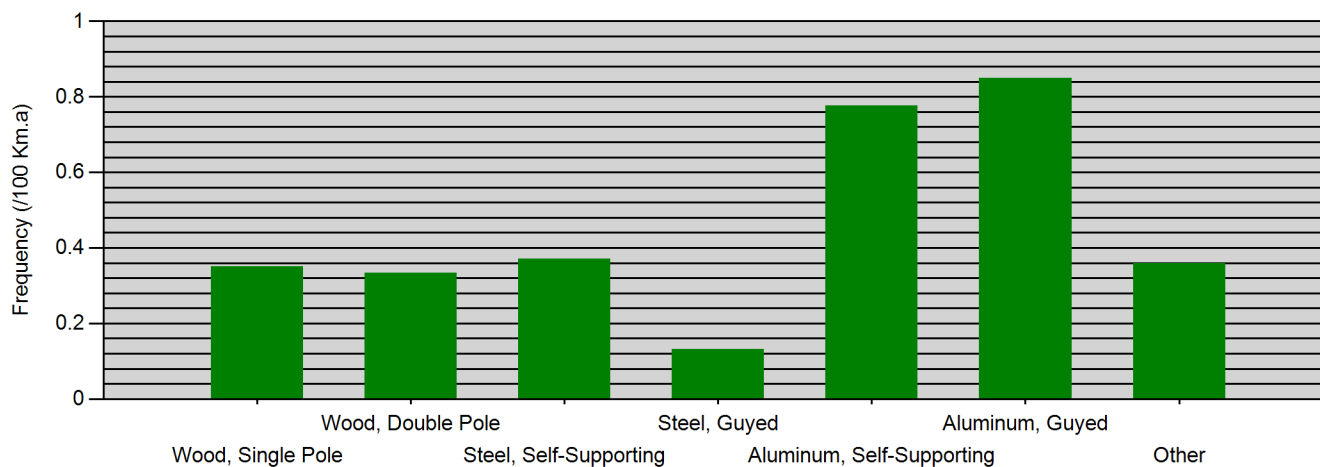
SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Other	23,146			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	19	0.0821
		Insulation System	214	0.9246
		Ground Wire	1	0.0043
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	234	1.0110

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Supporting Structures	136,780			
		Other	31	0.0227
		Structure	16	0.0117
		Joints And Dead-ends	11	0.0080
		Conductor	345	0.2522
		Insulation System	1045	0.7640
		Ground Wire	20	0.0146
		Hardware	113	0.0826
		Auxiliary Equipment	0	
		All Integral Subcomponents	1,581	1.1558



Frequency of line-related sustained forced outages of 200 - 299 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Single Pole	285	Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	0	
		Insulation System	1	0.3511
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	1	0.3511

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Double Pole	32,615			
		Other	5	0.0153
		Structure	1	0.0031
		Joints And Dead-ends	1	0.0031
		Conductor	21	0.0644
		Insulation System	80	0.2453
		Ground Wire	1	0.0031
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	109	0.3343

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self- Supporting	96,114			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	35	0.0364
		Insulation System	263	0.2736
		Ground Wire	4	0.0042
		Hardware	54	0.0562
		Auxiliary Equipment	0	
		All Integral Subcomponents	356	0.3704

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Guyed	15,252			
		Other	2	0.0131
		Structure	0	
		Joints And Dead-ends	3	0.0197
		Conductor	4	0.0262
		Insulation System	11	0.0721
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	20	0.1311

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Aluminum, Self- Supporting	386			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	1	0.2591
		Insulation System	2	0.5181
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	3	0.7772

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Aluminum, Guyed	942			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	0	
		Insulation System	8	0.8496
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	8	0.8496

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

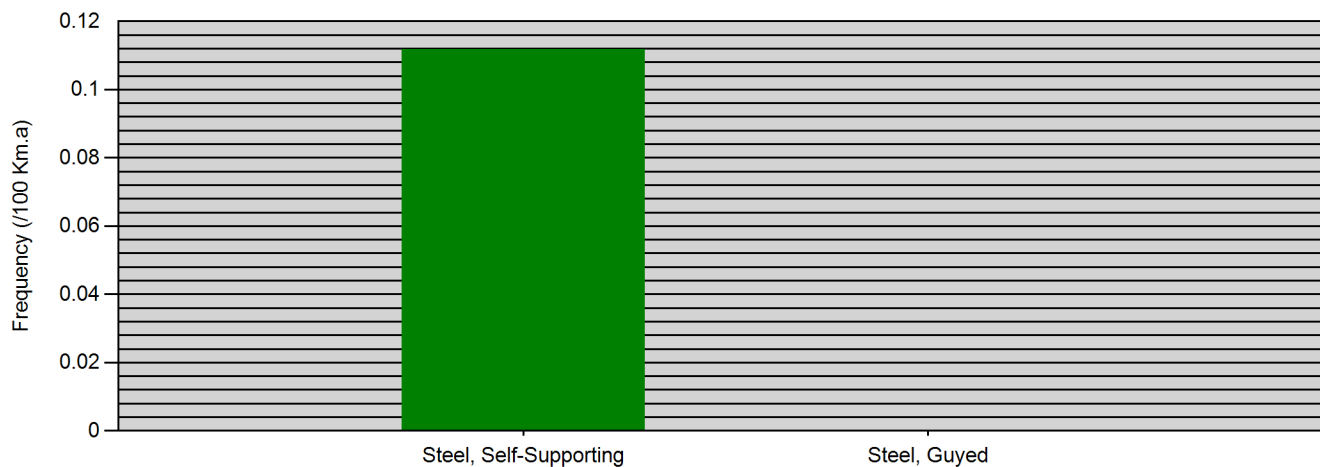
SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Other	7,226			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	0	
		Insulation System	26	0.3598
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	26	0.3598

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Supporting Structures	152,819			
		Other	7	0.0046
		Structure	1	0.0007
		Joints And Dead-ends	4	0.0026
		Conductor	61	0.0399
		Insulation System	391	0.2559
		Ground Wire	5	0.0033
		Hardware	54	0.0353
		Auxiliary Equipment	0	
		All Integral Subcomponents	523	0.3423



Frequency of line-related sustained forced outages of 300 - 399 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self-Supporting	894			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	1	0.1119
		Insulation System	0	
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	1	0.1119

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Guyed	4,400			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	0	
		Insulation System	0	
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	0	

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Supporting Structures	5,294			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	1	0.0189
		Insulation System	0	
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	1	0.0189



Frequency of line-related sustained forced outages of 500 - 599 kV transmission lines by supporting structure.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self-Supporting	21,826			
		Other	2	0.0092
		Structure	0	
		Joints And Dead-ends	1	0.0046
		Conductor	4	0.0183
		Insulation System	36	0.1649
		Ground Wire	2	0.0092
		Hardware	7	0.0321
		Auxiliary Equipment	0	
		All Integral Subcomponents	52	0.2383

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Guyed	31,417			
		Other	2	0.0064
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	53	0.1687
		Insulation System	241	0.7671
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	296	0.9422

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Other	2,870			
		Other	0	
		Structure	0	
		Joints And Dead-ends	0	
		Conductor	0	
		Insulation System	2	0.0697
		Ground Wire	0	
		Hardware	0	
		Auxiliary Equipment	0	
		All Integral Subcomponents	2	0.0697

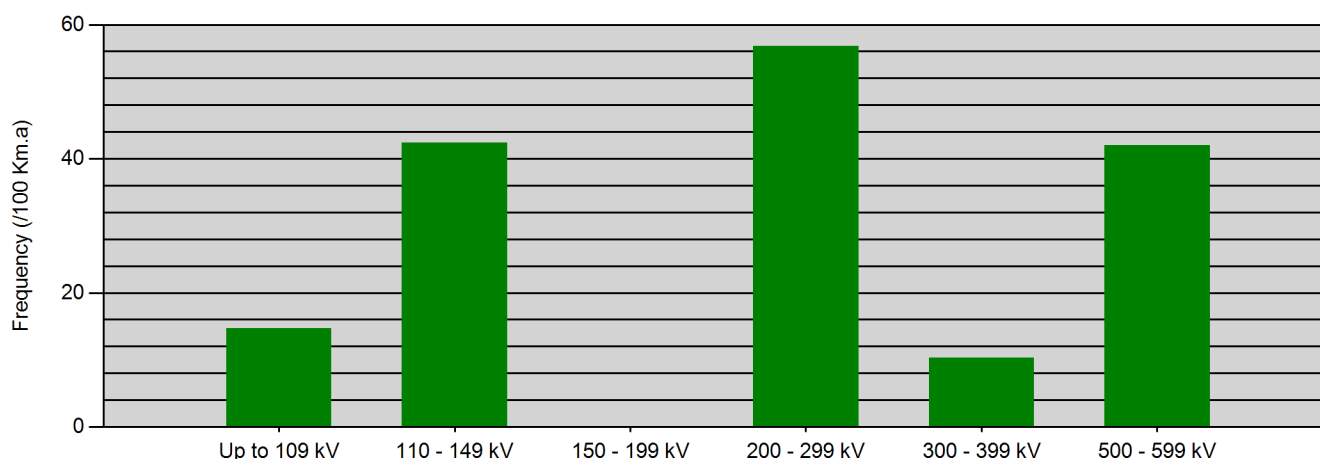
For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	Kilometer Years (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Supporting Structures	56,113			
		Other	4	0.0071
		Structure	0	
		Joints And Dead-ends	1	0.0018
		Conductor	57	0.1016
		Insulation System	279	0.4972
		Ground Wire	2	0.0036
		Hardware	7	0.0125
		Auxiliary Equipment	0	
		All Integral Subcomponents	350	0.6238

Transmission Line Analysis by Subcomponent for Terminal-Related Forced Outages



Mean Duration of terminal-related forced outages of transmission lines by voltage classification.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	TERMINAL YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILABILITY (%)
Up to 109 kV	4,763							
		Control And Protection Equipment	47	0.0099	912	19.4	0.10	0.002
		Surge Arrester	6	0.0013	36	5.9	0.17	0.000
		Bus	12	0.0025	38	3.2	0.07	0.000
		Disconnect	11	0.0023	774	70.4	0.08	0.002
		Circuit Switcher	8	0.0017	22	2.8	0.06	0.000
		Current Transformer (Free Standing)	2	0.0004	4	1.9	1.89	0.000
		Potential Device	4	0.0008	24	6.0	0.68	0.000
		Wave Traps	0					
		Other	20	0.0042	1,381	69.0	0.07	0.003
		In-Line Switches or Air Break Switches	52	0.0109	445	8.6	0.03	0.001
		Unknown	119	0.0250	498	4.2	0.03	0.001
		All Terminal Set	281	0.0590	4,133	14.7	0.05	0.010

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	TERMINAL YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
110 - 149 kV	8,585							
		Control And Protection Equipment	270	0.0314	3,496	12.9	0.22	0.005
		Surge Arrester	7	0.0008	1	0.1	0.12	0.000
		Bus	20	0.0023	1,173	58.7	0.98	0.002
		Disconnect	54	0.0063	16,698	309.2	8.17	0.022
		Circuit Switcher	9	0.0010	1,384	153.8	54.30	0.002
		Current Transformer (Free Standing)	6	0.0007	4,649	774.9	1.39	0.006
		Potential Device	18	0.0021	7,160	397.8	6.68	0.010
		Wave Traps	0					
		Other	31	0.0036	394	12.7	0.12	0.001
		In-Line Switches or Air Break Switches	32	0.0037	133	4.2	0.02	0.000
		Unknown	429	0.0500	2,056	4.8	0.00	0.003
		All Terminal Set	876	0.1019	37,144	42.4	0.08	0.049

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	TERMINAL YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
200 - 299 kV	7,297							
		Control And Protection Equipment	172	0.0236	4,972	28.9	0.43	0.008
		Surge Arrester	4	0.0005	10	2.4	2.40	0.000
		Bus	30	0.0041	974	32.5	6.59	0.002
		Disconnect	51	0.0070	14,471	283.8	26.28	0.023
		Circuit Switcher	4	0.0005	0	0.0	0.02	0.000
		Current Transformer (Free Standing)	6	0.0008	197	32.8	3.49	0.000
		Potential Device	41	0.0056	4,878	119.0	38.42	0.008
		Wave Traps	1	0.0001	80	80.4	80.43	0.000
		Other	11	0.0015	139	12.6	0.63	0.000
		In-Line Switches or Air Break Switches	24	0.0033	162	6.8	0.00	0.000
		Unknown	136	0.0186	1,381	10.2	0.12	0.002
		All Terminal Set	480	0.0656	27,264	56.8	0.51	0.043

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

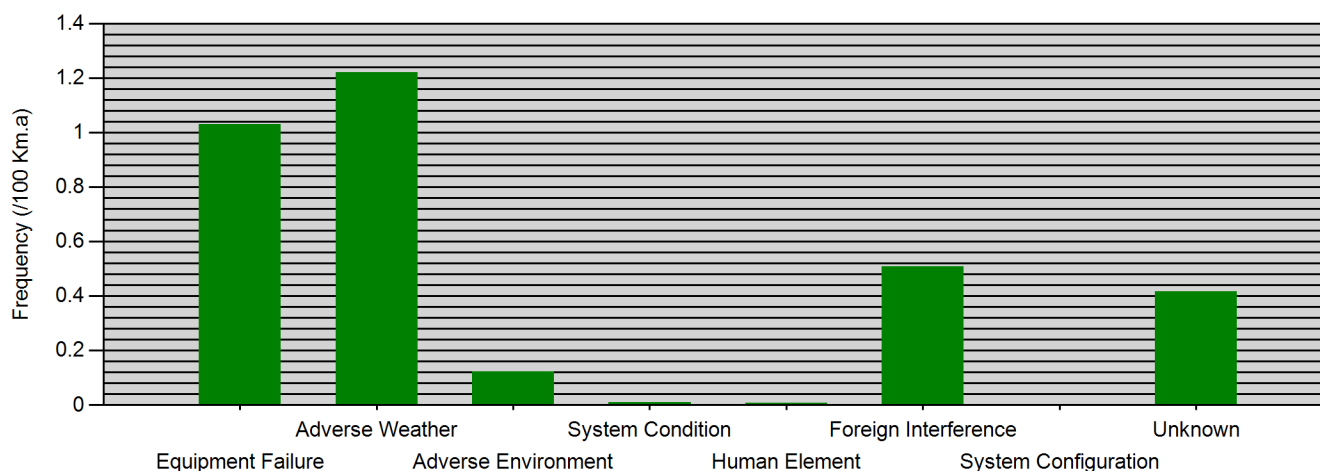
VOLTAGE CLASSIFICATION	TERMINAL YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
300 - 399 kV	88							
		Control And Protection Equipment	6	0.0682	9	1.5	1.32	0.001
		Surge Arrester	0					
		Bus	0					
		Disconnect	0					
		Circuit Switcher	0					
		Current Transformer (Free Standing)	0					
		Potential Device	1	0.0114	1	0.5	0.52	0.000
		Wave Traps	0					
		Other	1	0.0114	0	0.3	0.30	0.000
		In-Line Switches or Air Break Switches	1	0.0114	21	20.7	20.73	0.003
		Unknown	28	0.3182	350	12.5	7.16	0.045
		All Terminal Set	37	0.4206	380	10.3	6.93	0.049

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	TERMINAL YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
500 - 599 kV	965							
		Control And Protection Equipment	53	0.0549	187	3.5	0.38	0.002
		Surge Arrester	5	0.0052	462	92.4	72.35	0.006
		Bus	10	0.0104	6,122	612.2	9.13	0.072
		Disconnect	8	0.0083	442	55.3	6.51	0.005
		Circuit Switcher	3	0.0031	139	46.2	3.23	0.002
		Current Transformer (Free Standing)	1	0.0010	0	0.1	0.07	0.000
		Potential Device	17	0.0176	337	19.8	3.08	0.004
		Wave Traps	0					
		Other	10	0.0104	159	15.9	6.26	0.002
		In-Line Switches or Air Break Switches	54	0.0560	5	0.1	0.00	0.000
		Unknown	30	0.0311	174	5.8	0.00	0.002
		All Terminal Set	191	0.1980	8,025	42.0	0.17	0.095

Transmission Line Analysis by Primary Cause for Line-Related Sustained Forced Outages



Frequency of line-related sustained forced outages of Up to 109 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILABILITY (%)
Wood, Single Pole	56,667	Equipment Failure	242	0.4271	13,934	57.6		0.281
		Adverse Weather	604	1.0659	5,760	9.5		0.116
		Adverse Environment	69	0.1218	18,535	268.6		0.373
		System Condition	6	0.0106	639	106.4		0.013
		Human Element	5	0.0088	28	5.7		0.001
		Foreign Interference	292	0.5153	5,665	19.4		0.114
		System Configuration	2	0.0035	41	20.6		0.001
		Unknown	228	0.4024	4,586	20.1		0.092
		All Primary Causes	1,448	2.5554	49,188	34.0	3.39	0.991

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Wood, Double Pole	2,126							
		Equipment Failure	4	0.1882	24	6.1		0.013
		Adverse Weather	11	0.5174	25	2.3		0.014
		Adverse Environment	0		0			
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	5	0.2352	23	4.5		0.012
		System Configuration	0		0			
		Unknown	1	0.0470	8	8.0		0.004
		All Primary Causes	21	0.9878	80	3.8	3.42	0.043

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

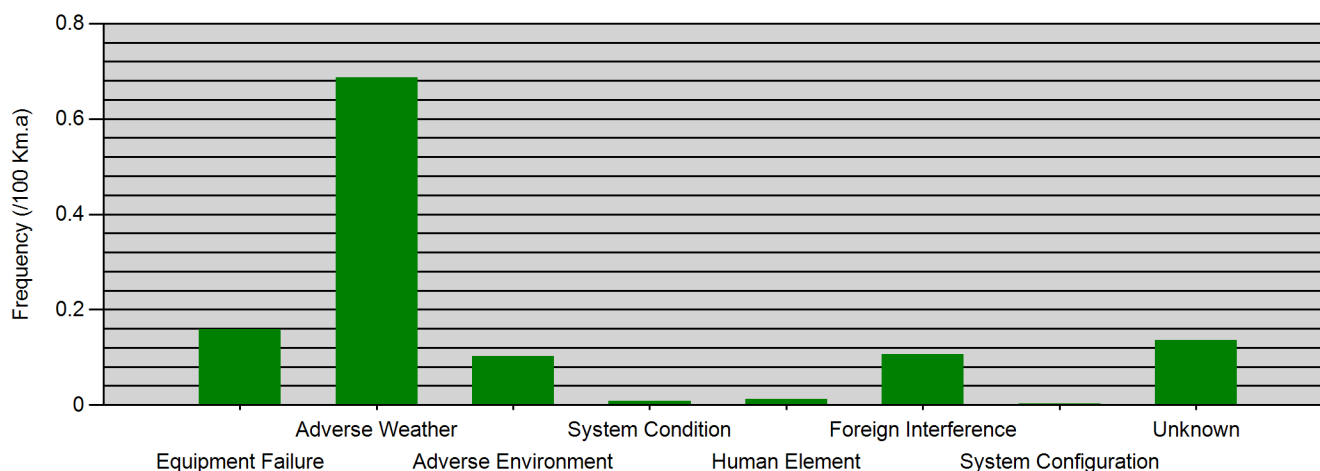
SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Steel, Self-Supporting	1,206	Equipment Failure	372	30.8469	275	0.7		0.260
		Adverse Weather	118	9.7848	282	2.4		0.267
		Adverse Environment	4	0.3317	0	0.0		0.000
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	8	0.6634	84	10.5		0.079
		System Configuration	0		0			
		Unknown	21	1.7414	86	4.1		0.082
		All Primary Causes	523	43.3682	727	1.4	0.02	0.688

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
All Primary Causes								
	59,999	Equipment Failure	618	1.0300	14,233	23.0		0.271
		Adverse Weather	733	1.2217	6,067	8.3		0.115
		Adverse Environment	73	0.1217	18,535	253.9		0.353
		System Condition	6	0.0100	639	106.4		0.012
		Human Element	5	0.0083	28	5.7		0.001
		Foreign Interference	305	0.5083	5,771	18.9		0.110
		System Configuration	2	0.0033	41	20.6		0.001
		Unknown	250	0.4167	4,680	18.7		0.089
		All Primary Causes	1,992	3.3200	49,994	25.1	0.39	0.951



Frequency of line-related sustained forced outages of 110 - 149 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILABILITY (%)
Wood, Single Pole	37,791	Equipment Failure	58	0.1535	1,918	33.1		0.058
		Adverse Weather	311	0.8229	1,408	4.5		0.043
		Adverse Environment	65	0.1720	23,737	365.2		0.717
		System Condition	2	0.0053	7	3.6		0.000
		Human Element	5	0.0132	50	10.0		0.002
		Foreign Interference	43	0.1138	659	15.3		0.020
		System Configuration	3	0.0079	238	79.3		0.007
		Unknown	25	0.0662	2,676	107.0		0.081
		All Primary Causes	512	1.3548	30,693	59.9	1.03	0.927

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Wood, Double Pole	28,433							
		Equipment Failure	72	0.2532	2,252	31.3		0.090
		Adverse Weather	118	0.4150	12,900	109.3		0.518
		Adverse Environment	33	0.1161	9,077	275.1		0.364
		System Condition	10	0.0352	44	4.4		0.002
		Human Element	6	0.0211	30	5.0		0.001
		Foreign Interference	50	0.1758	1,290	25.8		0.052
		System Configuration	1	0.0035	45	45.1		0.002
		Unknown	64	0.2251	1,137	17.8		0.046
		All Primary Causes	354	1.2450	26,775	75.6	6.88	1.075

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Steel, Self-Supporting	39,844	Equipment Failure	31	0.0778	2,222	71.7		0.064
		Adverse Weather	277	0.6952	45,435	164.0		1.302
		Adverse Environment	19	0.0477	161	8.5		0.005
		System Condition	0		0			
		Human Element	6	0.0151	81	13.4		0.002
		Foreign Interference	19	0.0477	624	32.8		0.018
		System Configuration	0		0			
		Unknown	91	0.2284	124	1.4		0.004
		All Primary Causes	443	1.1119	48,647	109.8	0.07	1.394

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Steel, Guyed	6,256	Equipment Failure	4	0.0639	13,766	3,441.6		2.512
		Adverse Weather	69	1.1029	145	2.1		0.027
		Adverse Environment	21	0.3357	904	43.1		0.165
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	1	0.0160	0	0.0		0.000
		System Configuration	0		0			
		Unknown	7	0.1119	1	0.2		0.000
		All Primary Causes	102	1.6304	14,816	145.3	0.05	2.704

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Aluminum, Guyed	1,300							
		Equipment Failure	3	0.2308	30	10.0		0.026
		Adverse Weather	0		0			
		Adverse Environment	0		0			
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	0		0			
		System Configuration	0		0			
		Unknown	0		0			
		All Primary Causes	3	0.2308	30	10.0	7.42	0.026

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Concrete	9							
		Equipment Failure	0		0			
		Adverse Weather	0		0			
		Adverse Environment	0		0			
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	0		0			
		System Configuration	0		0			
		Unknown	0		0			
		All Primary Causes	0		0	0.0		

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

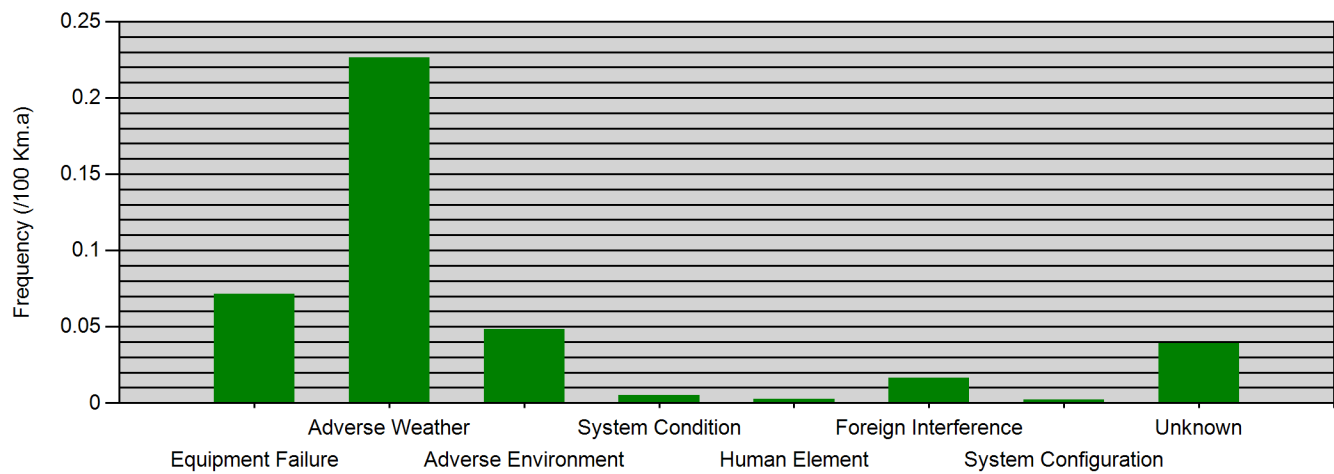
SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Other	23,146							
		Equipment Failure	50	0.2160	1,260	25.2		0.062
		Adverse Weather	164	0.7085	353	2.2		0.017
		Adverse Environment	3	0.0130	195	65.1		0.010
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	33	0.1426	610	18.5		0.030
		System Configuration	0		0			
		Unknown	0		0			
		All Primary Causes	250	1.0801	2,418	9.7	0.17	0.119

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
All Primary Causes	136,780							
		Equipment Failure	218	0.1594	21,449	98.4		0.179
		Adverse Weather	939	0.6865	60,242	64.2		0.503
		Adverse Environment	141	0.1031	34,074	241.7		0.284
		System Condition	12	0.0088	52	4.3		0.000
		Human Element	17	0.0124	161	9.4		0.001
		Foreign Interference	146	0.1067	3,183	21.8		0.027
		System Configuration	4	0.0029	283	70.7		0.002
		Unknown	187	0.1367	3,937	21.1		0.033
		All Primary Causes	1,664	1.2165	123,381	74.1	0.21	1.030



Frequency of line-related sustained forced outages of 200 - 299 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILABILITY (%)
Wood, Single Pole	285	Equipment Failure	0		0			
		Adverse Weather	0		0			
		Adverse Environment	0		0			
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	0		0			
		System Configuration	0		0			
		Unknown	0		0			
		All Primary Causes	0		0	0.0		

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Wood, Double Pole	32,615							
		Equipment Failure	25	0.0767	604	24.2		0.021
		Adverse Weather	59	0.1809	863	14.6		0.030
		Adverse Environment	29	0.0889	1,760	60.7		0.062
		System Condition	6	0.0184	56	9.4		0.002
		Human Element	3	0.0092	7	2.2		0.000
		Foreign Interference	9	0.0276	232	25.7		0.008
		System Configuration	1	0.0031	1	1.4		0.000
		Unknown	20	0.0613	109	5.4		0.004
		All Primary Causes	152	0.4661	3,632	23.9	0.53	0.127

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Steel, Self-Supporting	96,114	Equipment Failure	65	0.0676	12,489	192.1		0.148
		Adverse Weather	231	0.2403	1,789	7.7		0.021
		Adverse Environment	18	0.0187	634	35.2		0.008
		System Condition	1	0.0010	2	1.5		0.000
		Human Element	0		0			
		Foreign Interference	14	0.0146	286	20.4		0.003
		System Configuration	0		0			
		Unknown	24	0.0250	18	0.8		0.000
		All Primary Causes	353	0.3672	15,218	43.1	0.30	0.181

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Steel, Guyed	15,252	Equipment Failure	2	0.0131	20	10.0		0.002
		Adverse Weather	46	0.3016	157	3.4		0.012
		Adverse Environment	27	0.1770	28	1.0		0.002
		System Condition	1	0.0066	2	1.8		0.000
		Human Element	1	0.0066	0	0.0		0.000
		Foreign Interference	0		0			
		System Configuration	2	0.0131	5	2.4		0.000
		Unknown	14	0.0918	10	0.7		0.001
		All Primary Causes	93	0.6098	222	2.4	0.05	0.017

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Aluminum, Self-Supporting	386							
		Equipment Failure	2	0.5181	115	57.3		0.339
		Adverse Weather	2	0.5181	0	0.1		0.000
		Adverse Environment	0		0			
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	1	0.2591	4	4.5		0.013
		System Configuration	0		0			
		Unknown	0		0			
		All Primary Causes	5	1.2953	119	23.8	4.48	0.353

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Aluminum, Guyed	942							
		Equipment Failure	0		0			
		Adverse Weather	2	0.2124	1	0.3		0.001
		Adverse Environment	0		0			
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	1	0.1062	37	37.2		0.045
		System Configuration	0		0			
		Unknown	2	0.2124	101	50.4		0.122
		All Primary Causes	5	0.5310	139	27.7	29.72	0.168

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

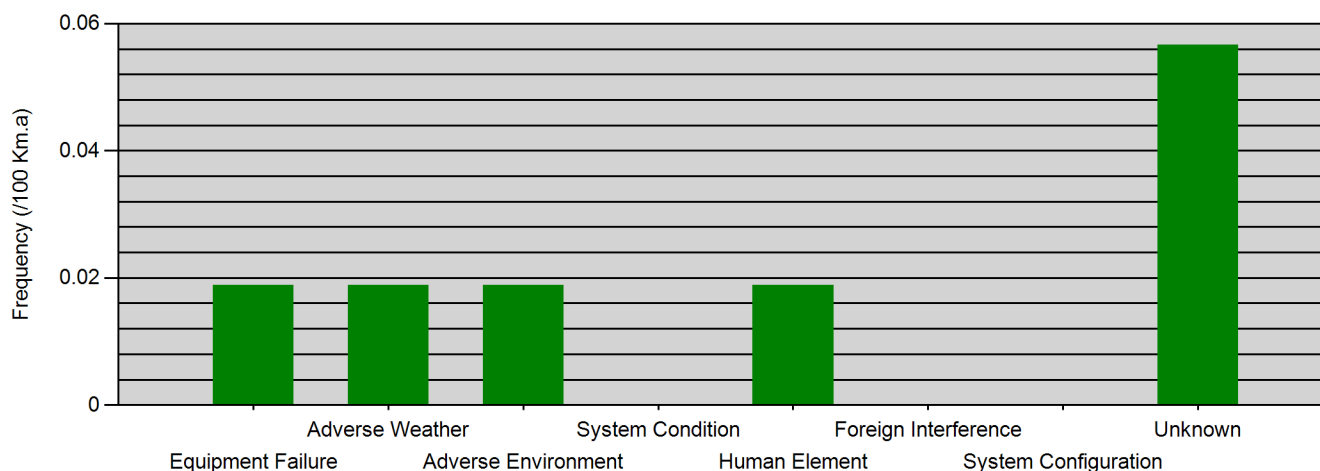
SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Other	7,226							
		Equipment Failure	15	0.2076	1,091	72.7		0.172
		Adverse Weather	6	0.0830	3	0.5		0.001
		Adverse Environment	0		0			
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	0		0			
		System Configuration	0		0			
		Unknown	0		0			
		All Primary Causes	21	0.2906	1,094	52.1	7.83	0.173

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
All Primary Causes	152,819							
		Equipment Failure	109	0.0713	14,319	131.4		0.107
		Adverse Weather	346	0.2264	2,814	8.1		0.021
		Adverse Environment	74	0.0484	2,422	32.7		0.018
		System Condition	8	0.0052	60	7.5		0.000
		Human Element	4	0.0026	7	1.6		0.000
		Foreign Interference	25	0.0164	559	22.4		0.004
		System Configuration	3	0.0020	6	2.1		0.000
		Unknown	60	0.0393	238	4.0		0.002
		All Primary Causes	629	0.4116	20,425	32.5	0.25	0.153



Frequency of line-related sustained forced outages of 300 - 399 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILABILITY (%)
Steel, Self-Supporting	894	Equipment Failure	1	0.1119	17	17.0		0.022
		Adverse Weather	1	0.1119	17	16.9		0.022
		Adverse Environment	1	0.1119	497	497.4		0.635
		System Condition	0		0			
		Human Element	1	0.1119	0	0.3		0.000
		Foreign Interference	0		0			
		System Configuration	0		0			
		Unknown	3	0.3357	45	15.1		0.058
		All Primary Causes	7	0.7833	576	82.4	16.85	0.737

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

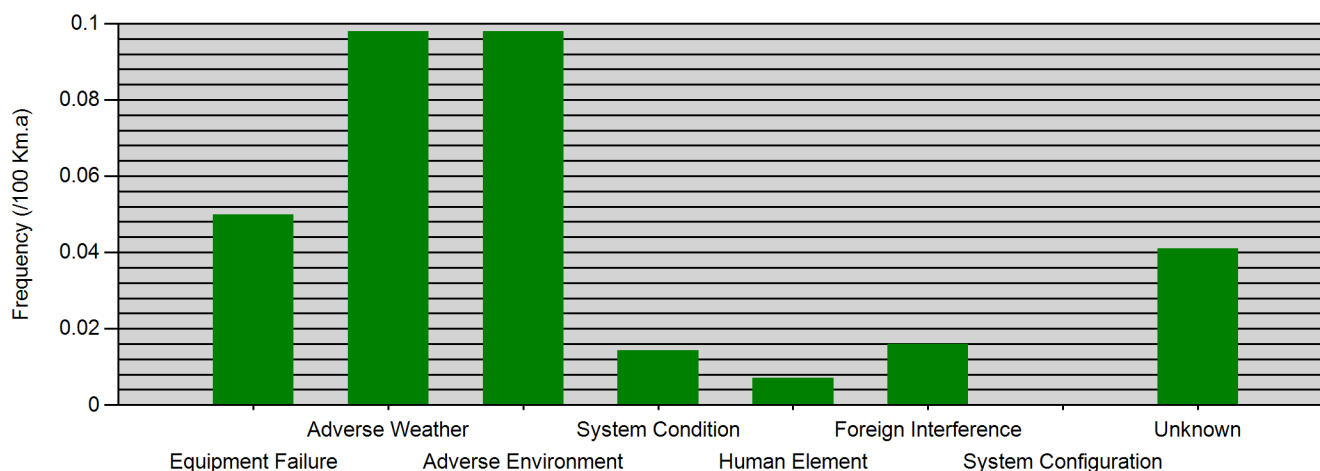
SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Steel, Guyed	4,400	Equipment Failure	0		0			
		Adverse Weather	0		0			
		Adverse Environment	0		0			
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	0		0			
		System Configuration	0		0			
		Unknown	0		0			
		All Primary Causes	0		0	0.0		

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
All Primary Causes	5,294							
		Equipment Failure	1	0.0189	17	17.0		0.004
		Adverse Weather	1	0.0189	17	16.9		0.004
		Adverse Environment	1	0.0189	497	497.4		0.107
		System Condition	0		0			
		Human Element	1	0.0189	0	0.3		0.000
		Foreign Interference	0		0			
		System Configuration	0		0			
		Unknown	3	0.0567	45	15.1		0.010
		All Primary Causes	7	0.1323	576	82.4	16.85	0.124



Frequency of line-related sustained forced outages of 500 - 599 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILABILITY (%)
Steel, Self-Supporting	21,826	Equipment Failure	15	0.0687	190	12.7		0.010
		Adverse Weather	7	0.0321	80	11.4		0.004
		Adverse Environment	2	0.0092	44	22.2		0.002
		System Condition	1	0.0046	11	10.8		0.001
		Human Element	2	0.0092	13	6.7		0.001
		Foreign Interference	2	0.0092	306	152.8		0.016
		System Configuration	0		0			
		Unknown	1	0.0046	0	0.1		0.000
		All Primary Causes	30	0.1376	644	21.5	7.86	0.034

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Steel, Guyed	31,417	Equipment Failure	13	0.0414	1,991	153.2		0.072
		Adverse Weather	46	0.1464	165	3.6		0.006
		Adverse Environment	53	0.1687	709	13.4		0.026
		System Condition	7	0.0223	195	27.8		0.007
		Human Element	2	0.0064	1	0.7		0.000
		Foreign Interference	7	0.0223	129	18.4		0.005
		System Configuration	0		0			
		Unknown	22	0.0700	140	6.4		0.005
		All Primary Causes	150	0.4775	3,330	22.2	0.18	0.121

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
Other	2,870							
		Equipment Failure	0		0			
		Adverse Weather	2	0.0697	7	3.3		0.003
		Adverse Environment	0		0			
		System Condition	0		0			
		Human Element	0		0			
		Foreign Interference	0		0			
		System Configuration	0		0			
		Unknown	0		0			
		All Primary Causes	2	0.0697	7	3.3	3.32	0.003

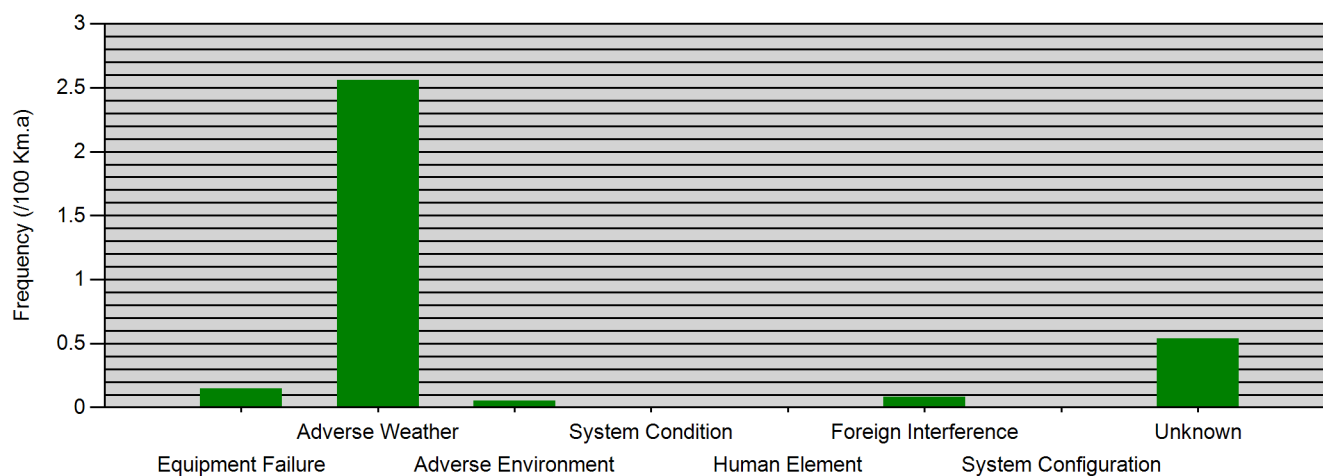
For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILA BILITY (%)
All Primary Causes								
	56,113	Equipment Failure	28	0.0499	2,181	77.9		0.044
		Adverse Weather	55	0.0980	251	4.6		0.005
		Adverse Environment	55	0.0980	753	13.7		0.015
		System Condition	8	0.0143	206	25.7		0.004
		Human Element	4	0.0071	15	3.7		0.000
		Foreign Interference	9	0.0160	434	48.3		0.009
		System Configuration	0		0			
		Unknown	23	0.0410	140	6.1		0.003
All Primary Causes			182	0.3243	3,980	21.9	0.43	0.081

Transmission Line Analysis by Primary Cause for Line-Related Transient Forced Outages



Frequency of line-related transient forced outages of Up to 109 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Single Pole	56,667			
		Equipment Failure	23	0.0406
		Adverse Weather	1513	2.6700
		Adverse Environment	31	0.0547
		System Condition	2	0.0035
		Human Element	1	0.0018
		Foreign Interference	48	0.0847
		System Configuration	0	
		Unknown	315	0.5559
		All Primary Causes	1,933	3.4112

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Double Pole	2,126			
		Equipment Failure	0	
		Adverse Weather	5	0.2352
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	3	0.1411
		System Configuration	0	
		Unknown	5	0.2352
		All Primary Causes	13	0.6115

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

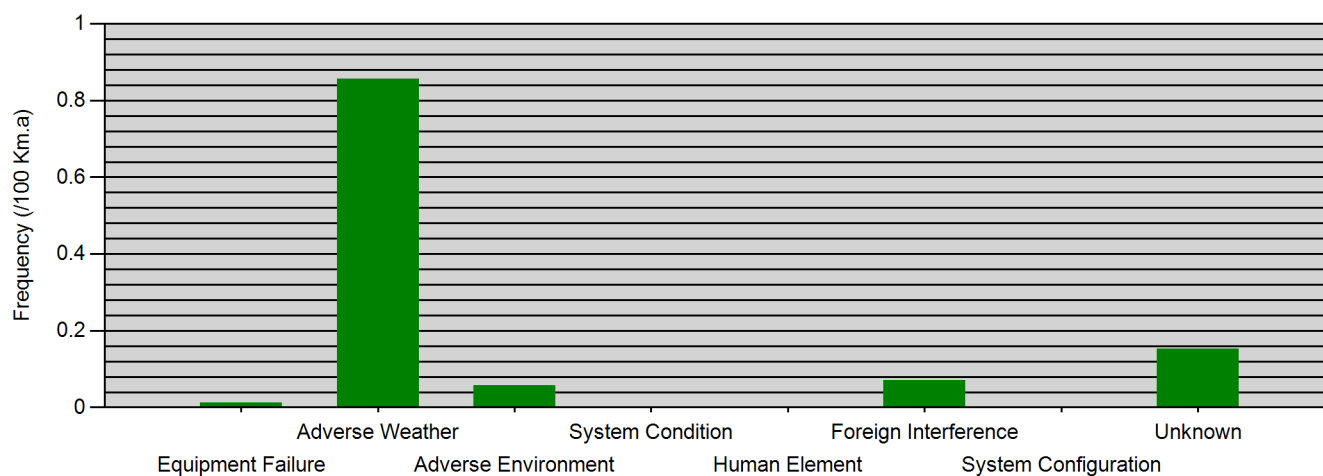
SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self-Supporting	1,206			
		Equipment Failure	65	5.3899
		Adverse Weather	19	1.5755
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	2	0.1658
		All Primary Causes	86	7.1312

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Primary Causes	59,999			
		Equipment Failure	88	0.1467
		Adverse Weather	1537	2.5617
		Adverse Environment	31	0.0517
		System Condition	2	0.0033
		Human Element	1	0.0017
		Foreign Interference	51	0.0850
		System Configuration	0	
		Unknown	322	0.5367
		All Primary Causes	2,032	3.3868



Frequency of line-related transient forced outages of 110 - 149 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Single Pole	37,791			
		Equipment Failure	5	0.0132
		Adverse Weather	409	1.0823
		Adverse Environment	40	0.1058
		System Condition	0	
		Human Element	0	
		Foreign Interference	75	0.1985
		System Configuration	2	0.0053
		Unknown	78	0.2064
		All Primary Causes	609	1.6115

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Double Pole	28,433			
		Equipment Failure	3	0.0106
		Adverse Weather	213	0.7491
		Adverse Environment	16	0.0563
		System Condition	1	0.0035
		Human Element	3	0.0106
		Foreign Interference	10	0.0352
		System Configuration	0	
		Unknown	112	0.3939
		All Primary Causes	358	1.2592

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self-Supporting	39,844			
		Equipment Failure	4	0.0100
		Adverse Weather	283	0.7103
		Adverse Environment	7	0.0176
		System Condition	1	0.0025
		Human Element	0	
		Foreign Interference	9	0.0226
		System Configuration	0	
		Unknown	16	0.0402
		All Primary Causes	320	0.8032

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Guyed	6,256			
		Equipment Failure	1	0.0160
		Adverse Weather	31	0.4955
		Adverse Environment	15	0.2398
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	1	0.0160
		All Primary Causes	48	0.7673

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Aluminum, Guyed	1,300	Equipment Failure	0	
		Adverse Weather	9	0.6923
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	3	0.2308
		All Primary Causes	12	0.9231

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Concrete	9	Equipment Failure	0	
		Adverse Weather	0	
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	0	
		All Primary Causes	0	

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

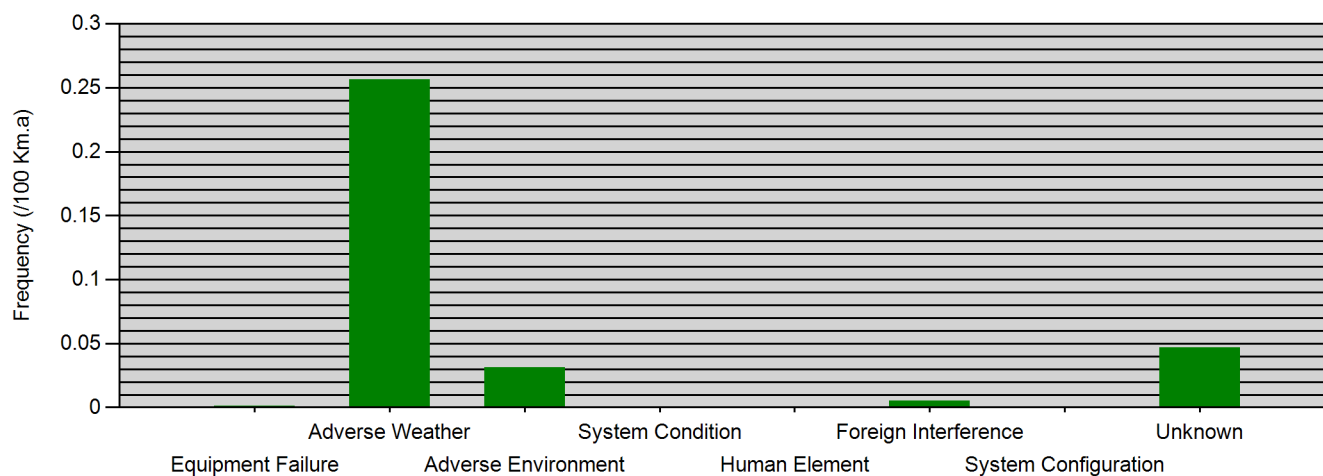
SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Other	23,146			
		Equipment Failure	3	0.0130
		Adverse Weather	227	0.9807
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	4	0.0173
		System Configuration	0	
		Unknown	0	
		All Primary Causes	234	1.0110

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Primary Causes	136,780			
		Equipment Failure	16	0.0117
		Adverse Weather	1172	0.8568
		Adverse Environment	78	0.0570
		System Condition	2	0.0015
		Human Element	3	0.0022
		Foreign Interference	98	0.0716
		System Configuration	2	0.0015
		Unknown	210	0.1535
		All Primary Causes	1,581	1.1558



Frequency of line-related transient forced outages of 200 - 299 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Single Pole	285	Equipment Failure	0	0.3511
		Adverse Weather	0	
		Adverse Environment	1	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	0	
		All Primary Causes	1	

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Wood, Double Pole	32,615			
		Equipment Failure	0	
		Adverse Weather	66	0.2024
		Adverse Environment	8	0.0245
		System Condition	1	0.0031
		Human Element	0	
		Foreign Interference	1	0.0031
		System Configuration	0	
		Unknown	33	0.1012
		All Primary Causes	109	0.3343

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self-Supporting	96,114			
		Equipment Failure	1	0.0010
		Adverse Weather	287	0.2986
		Adverse Environment	38	0.0395
		System Condition	0	
		Human Element	0	
		Foreign Interference	5	0.0052
		System Configuration	0	
		Unknown	25	0.0260
		All Primary Causes	356	0.3703

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Guyed	15,252			
		Equipment Failure	1	0.0066
		Adverse Weather	9	0.0590
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	2	0.0131
		System Configuration	0	
		Unknown	8	0.0525
		All Primary Causes	20	0.1312

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Aluminum, Self- Supporting	386			
		Equipment Failure	0	
		Adverse Weather	1	0.2591
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	2	0.5181
	All Primary Causes	3	0.7772	

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Aluminum, Guyed	942	Equipment Failure	0	
		Adverse Weather	3	0.3186
		Adverse Environment	1	0.1062
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	4	0.4248
		All Primary Causes	8	0.8496

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

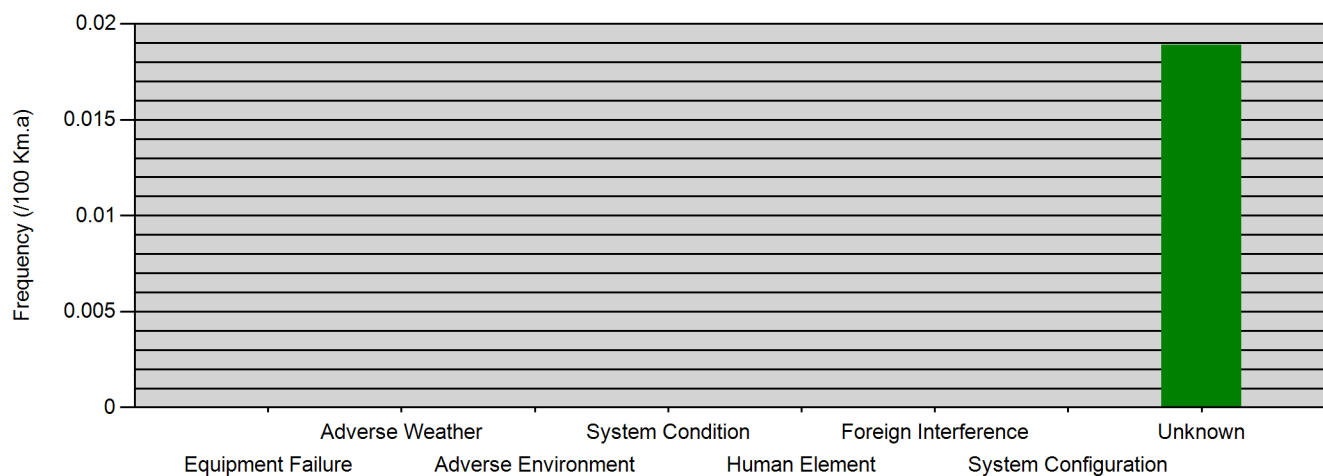
SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Other	7,226			
		Equipment Failure	0	
		Adverse Weather	26	0.3598
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	0	
		All Primary Causes	26	0.3598

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Primary Causes	152,819			
		Equipment Failure	2	0.0013
		Adverse Weather	392	0.2565
		Adverse Environment	48	0.0314
		System Condition	1	0.0007
		Human Element	0	
		Foreign Interference	8	0.0052
		System Configuration	0	
		Unknown	72	0.0471
		All Primary Causes	523	0.3422



Frequency of line-related transient forced outages of 300 - 399 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self-Supporting	894	Equipment Failure	0	
		Adverse Weather	0	
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	1	0.1119
		All Primary Causes	1	0.1119

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

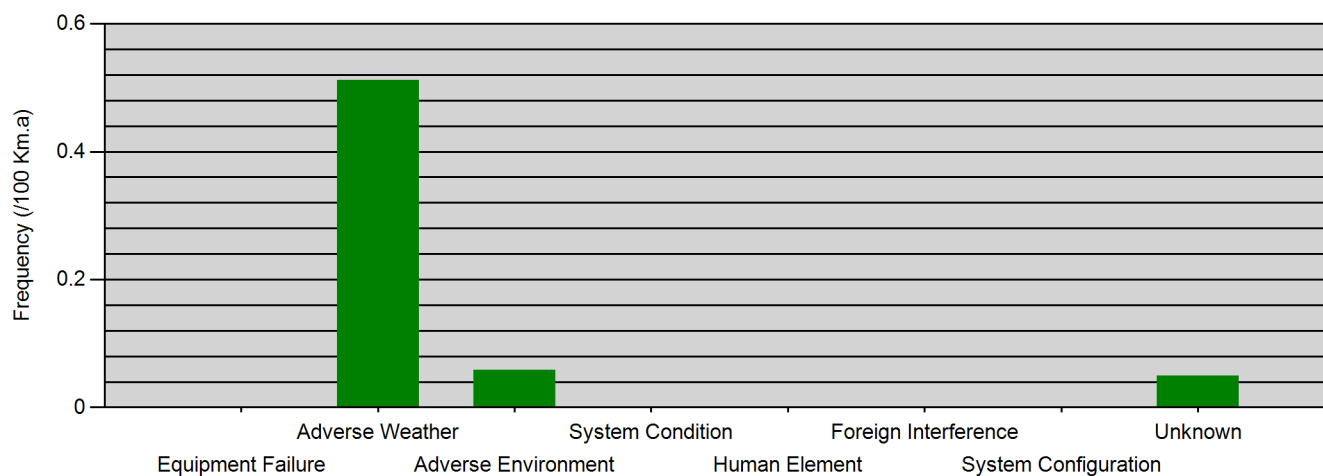
SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Guyed	4,400	Equipment Failure	0	
		Adverse Weather	0	
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	0	
		All Primary Causes	0	

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Primary Causes	5,294			
		Equipment Failure	0	
		Adverse Weather	0	
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	1	0.0189
		All Primary Causes	1	0.0189



Frequency of line-related transient forced outages of 500 - 599 kV transmission lines by primary cause.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Self-Supporting	21,826	Equipment Failure	0	
		Adverse Weather	36	0.1649
		Adverse Environment	13	0.0596
		System Condition	0	
		Human Element	0	
		Foreign Interference	1	0.0046
		System Configuration	0	
		Unknown	2	0.0092
		All Primary Causes	52	0.2383

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Steel, Guyed	31,417			
		Equipment Failure	1	0.0032
		Adverse Weather	249	0.7926
		Adverse Environment	20	0.0637
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	26	0.0828
		All Primary Causes	296	0.9423

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
Other	2,870			
		Equipment Failure	0	
		Adverse Weather	2	0.0697
		Adverse Environment	0	
		System Condition	0	
		Human Element	0	
		Foreign Interference	0	
		System Configuration	0	
		Unknown	0	
		All Primary Causes	2	0.0697

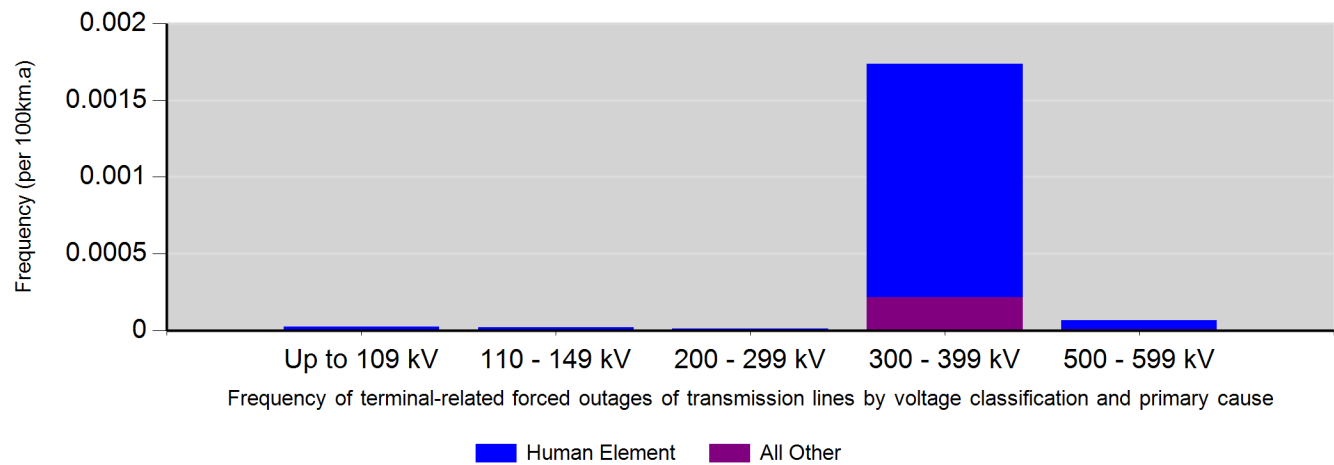
For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

SUPPORTING STRUCTURE	KILOMETRE YEARS (Km.a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)
All Primary Causes	56,113			
		Equipment Failure	1	0.0018
		Adverse Weather	287	0.5115
		Adverse Environment	33	0.0588
		System Condition	0	
		Human Element	0	
		Foreign Interference	1	0.0018
		System Configuration	0	
		Unknown	28	0.0499
		All Primary Causes	350	0.6238

Transmission Line Analysis by Primary Cause for Terminal-Related Forced Outages



For Data Submitted by: All Canada

For the Period: 2021 to 2025

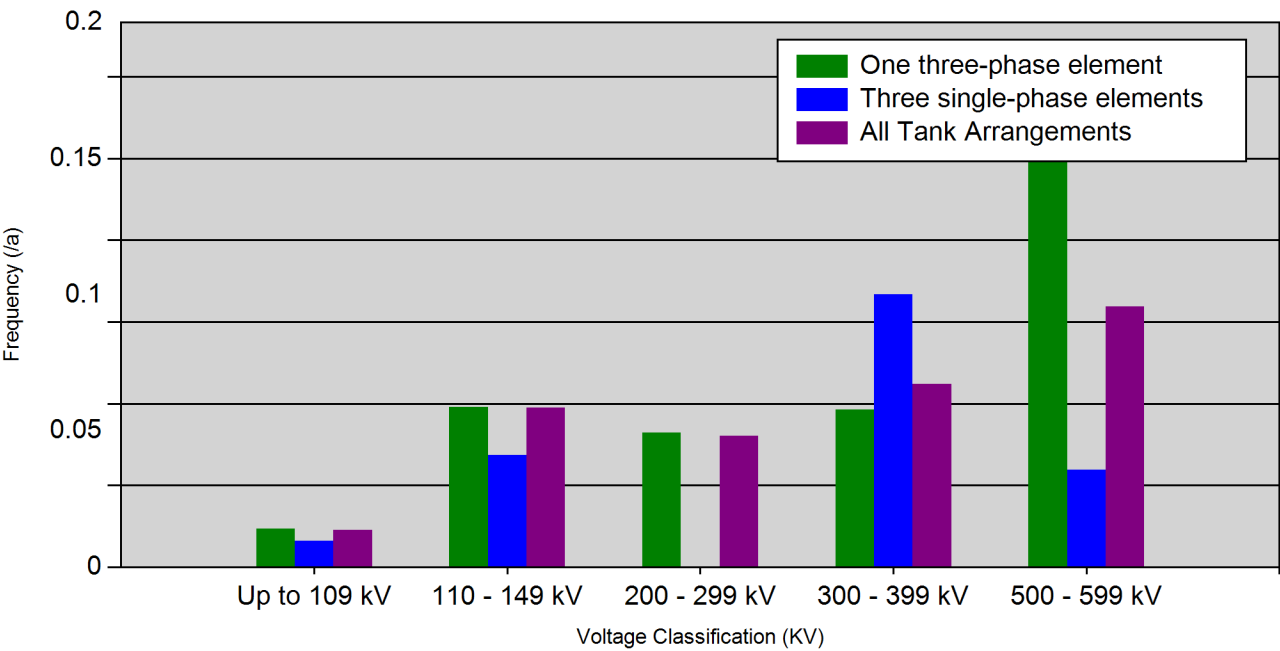
VOLTAGE CLASSIFICATION	TERMINAL YEARS (a)	PRIMARY CAUSE	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Up to 109 kV	2,449	Adverse Environment	6	0.0025	246.65	41.11	3.97	0.001
		Adverse Weather	33	0.0135	606.87	18.39	0.05	0.003
		Equipment Failure	52	0.0212	2,206.40	42.43	3.84	0.010
		Foreign Interference	20	0.0082	156.05	7.80	5.75	0.001
		Human Element	28	0.0114	33.00	1.18	0.12	0.000
		System Condition	14	0.0057	2.93	0.21	0.03	0.000
		System Configuration	7	0.0029	235.48	33.64	4.27	0.001
		Unknown	94	0.0384	282.25	3.00	0.00	0.001
		All Primary Causes	254	0.1037	3,769.63	14.84	0.07	0.018
110 - 149 kV	5,213	Adverse Environment	19	0.0036	371.85	19.57	1.40	0.001
		Adverse Weather	83	0.0159	743.35	8.96	0.07	0.002
		Equipment Failure	243	0.0466	33,291.87	137.00	2.37	0.073
		Foreign Interference	36	0.0069	1,074.63	29.85	1.07	0.002
		Human Element	120	0.0230	968.28	8.07	0.13	0.002
		System Condition	23	0.0044	63.97	2.78	0.18	0.000
		System Configuration	13	0.0025	169.73	13.06	0.60	0.000
		Unknown	343	0.0658	398.07	1.16	0.00	0.001
		All Primary Causes	880	0.1688	37,081.75	42.14	0.08	0.081
200 - 299 kV	5,251	Adverse Environment	27	0.0051	634.33	23.49	2.77	0.001
		Adverse Weather	58	0.0110	39.02	0.67	0.02	0.000
		Equipment Failure	239	0.0455	24,841.82	103.94	6.04	0.054
Electricity Canada	130	Foreign Interference	11	0.0021	124.68	11.33	5.93	0.000

200 - 299 kV	5,251	Human Element	73	0.0139	1,178.80	16.15	0.22	0.003
		System Condition	12	0.0023	122.92	10.24	1.21	0.000
		System Configuration	5	0.0010	8.53	1.71	0.07	0.000
		Unknown	75	0.0143	202.42	2.70	0.00	0.000
		All Primary Causes	500	0.0952	27,152.52	54.31	0.70	0.059
300 - 399 kV	87	Adverse Environment	1	0.0115	2.10	2.10	2.10	0.000
		Adverse Weather	4	0.0460	48.03	12.01	13.52	0.006
		Equipment Failure	15	0.1724	251.63	16.78	4.73	0.033
		Foreign Interference	1	0.0115	10.37	10.37	10.37	0.001
		Human Element	7	0.0805	4.62	0.66	0.35	0.001
		System Configuration	39	0.4483	242.82	6.23	7.20	0.032
		Unknown	3	0.0345	0.97	0.32	0.30	0.000
		All Primary Causes	70	0.8046	560.53	8.01	6.13	0.074
500 - 599 kV	858	Adverse Environment	4	0.0047	8.97	2.24	0.00	0.000
		Adverse Weather	9	0.0105	18.62	2.07	0.00	0.000
		Equipment Failure	61	0.0711	7,541.03	123.62	4.86	0.100
		Foreign Interference	3	0.0035	4.97	1.66	1.75	0.000
		Human Element	27	0.0315	123.83	4.59	0.35	0.002
		System Condition	7	0.0082	195.55	27.94	1.62	0.003
		Unknown	26	0.0303	127.63	4.91	0.08	0.002
		All Primary Causes	137	0.1597	8,020.60	58.54	0.77	0.107

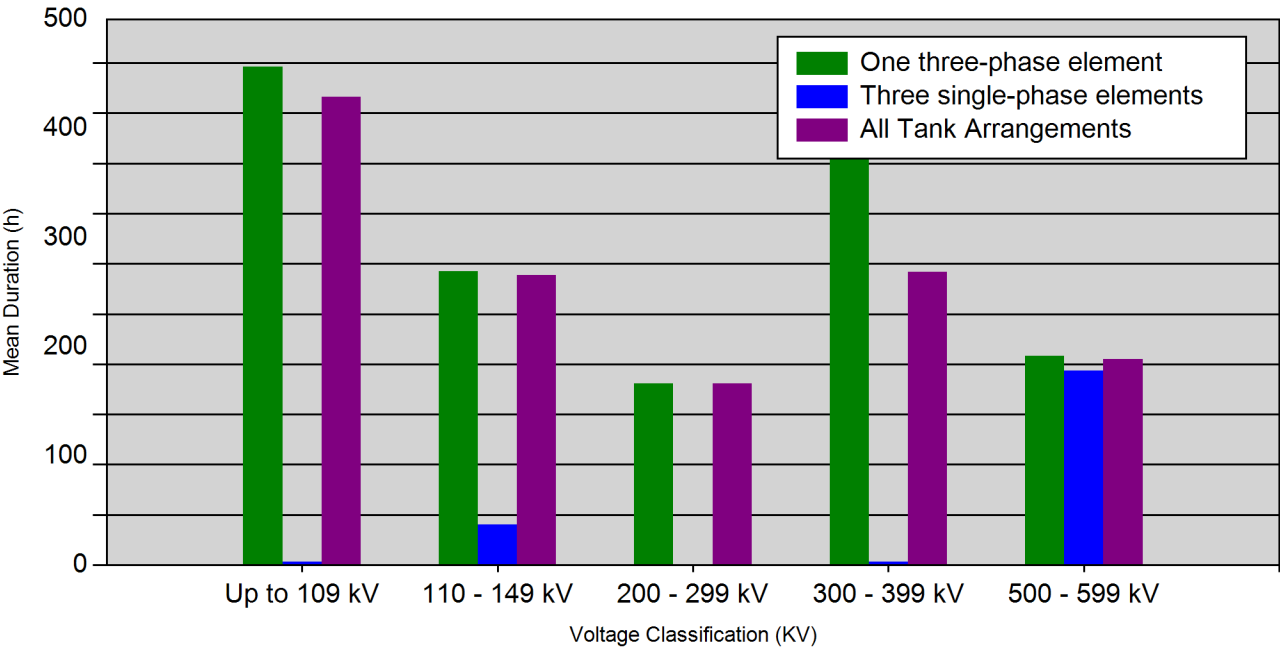
The title of the transformer bank performance statistics listing is:

TA-RP30: Transformer Bank Analysis by Voltage Classification and Subcomponent

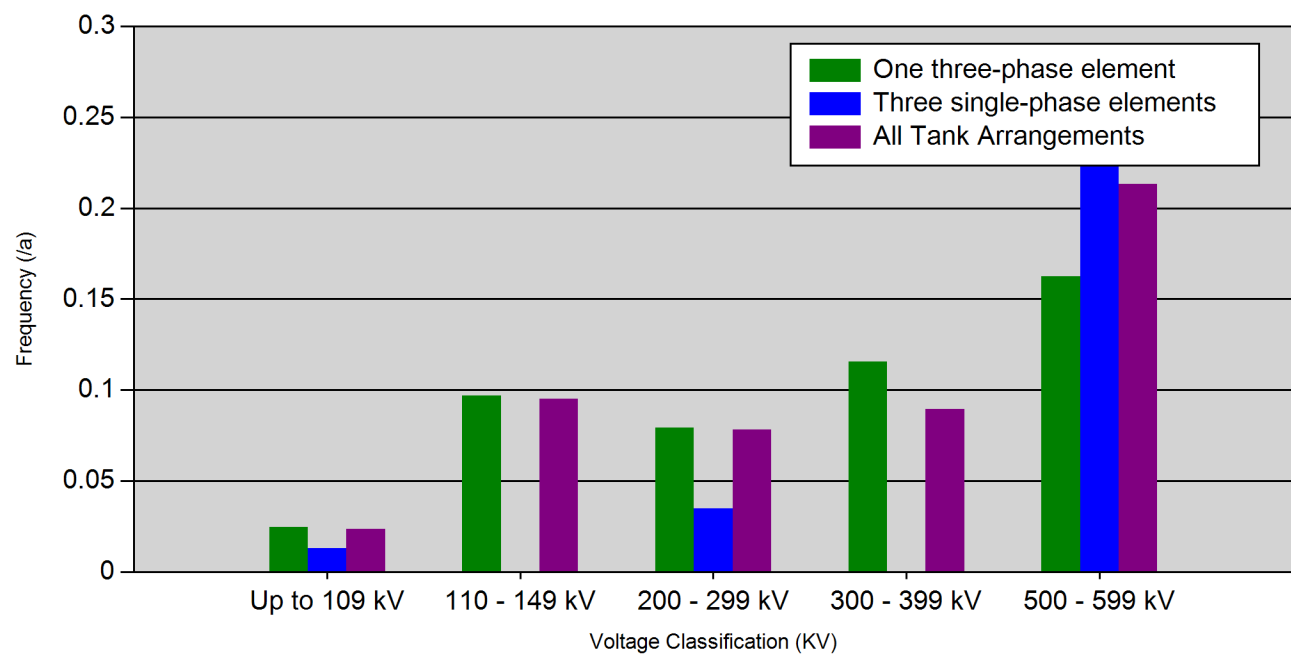
Readers should note that when no outages are attributed to a subcomponent or primary cause, the columns for related statistics are left blank.



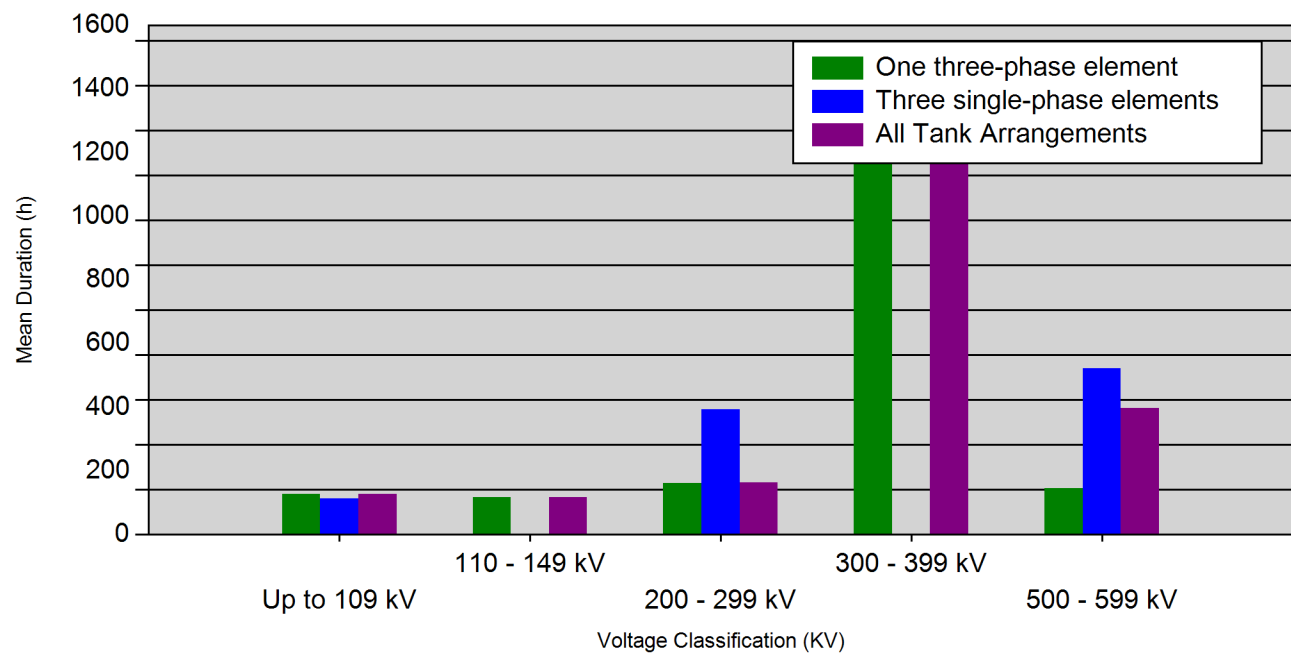
Frequency of forced outages involving integral subcomponents of transformer banks by voltage classification and tank arrangements.



Mean Duration of forced outages involving integral subcomponents of transformer banks by voltage classification and tank arrangements.

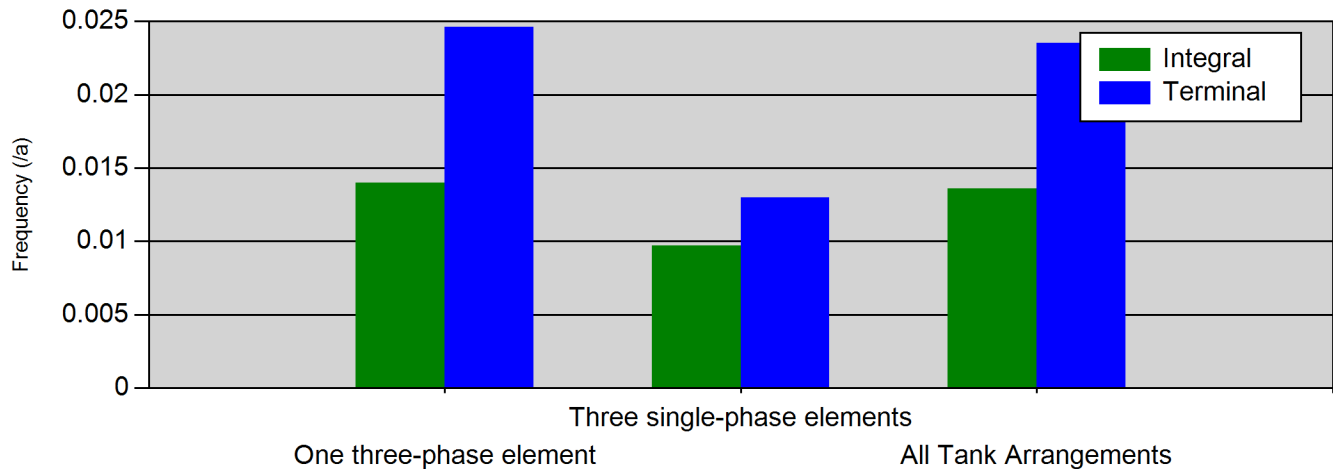


Frequency of forced outages involving terminal subcomponents of transformer banks by voltage classification and tank arrangements.



Mean Duration of forced outages involving terminal subcomponents of transformer banks by voltage classification and tank arrangements.

Transformer Bank Analysis by Voltage Classification and Subcomponent



Frequency of forced outages involving integral subcomponents & terminal equipment of Up to 109 kV transformer banks by tank arrangements

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
One three-phase element	3,378								
		Other	4	0.0012	460	115.1	90.48		0.002
		Bushings (Including C.T.'s)	10	0.0030	12,261	1,226.1	520.73		0.042
		Windings	2	0.0006	93	46.4	46.35		0.000
		On-Load Tap Changer	5	0.0015	661	132.1	45.57		0.002
		Core	2	0.0006	22	11.0	10.97		0.000
		Leads	0		0				0.000
		Cooling Equipment	18	0.0053	7,397	410.9	28.04		0.025
		Auxiliary Equipment	6	0.0018	555	92.4	6.85		0.002
		All Integral Subcomponents	47	0.0140	21,449	456.3	35.38	456.3	0.073
		Control And Protection Equipment	28	0.0083	841	30.0	3.66		0.003
		Surge Arrester	1	0.0003	7	7.0	7.00		0.000
		Bus	22	0.0065	3,319	150.9	4.03		0.011
		Disconnect	13	0.0038	4,107	315.9	6.05		0.014
		Circuit Switcher	2	0.0006	1,091	545.3	545.28		0.004
		Current Transformer (Free Standing)	0		0				0.000
		Potential Devices	2	0.0006	168	84.1	84.07		0.001
		Motor-Operated Ground Switch	0		0				0.000
		Other	6	0.0018	159	26.4	6.49		0.001

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Unknown	9	0.0027	893	99.2	1.35		0.003
		All Terminal Equipment	83	0.0246	10,585	127.5	4.38	127.5	0.036

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

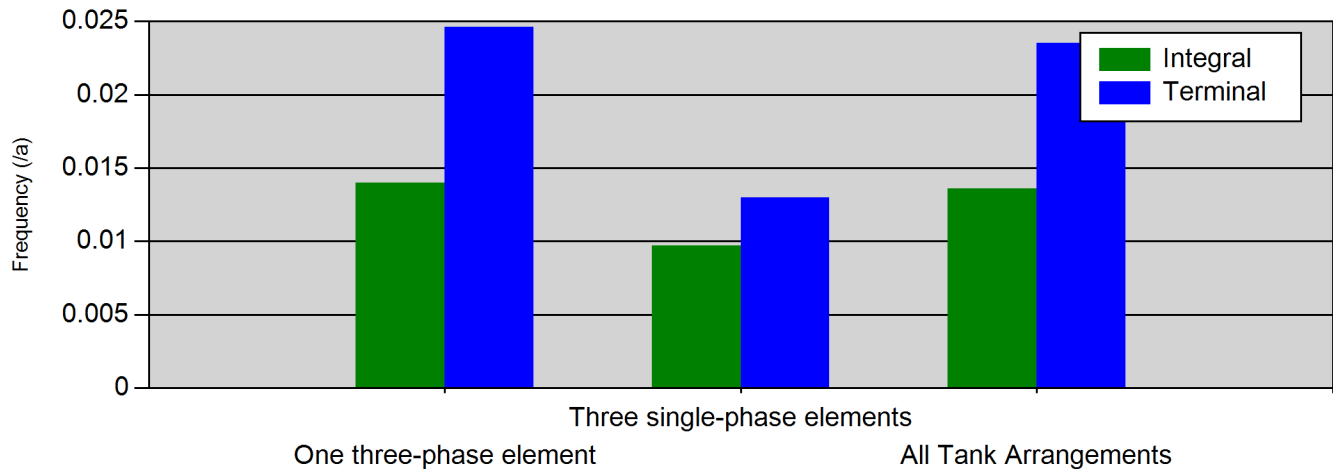
TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Three single-phase elements	309								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Windings	0		0				0.000
		On-Load Tap Changer	0		0				0.000
		Core	2	0.0065	4	1.9	1.92		0.000
		Leads	0		0				0.000
		Cooling Equipment	0		0				0.000
		Auxiliary Equipment	1	0.0032	4	4.0	3.95		0.000
		All Integral Subcomponents	3	0.0097	8	2.6	1.92	2.6	0.000
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	4	0.0130	449	112.3	1.18		0.017
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Devices	0		0				0.000
		Motor-Operated Ground Switch	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	4	0.0130	449	112.3	1.18	112.3	0.017

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Tank Arrangements	3,687								
		Other	4	0.0011	460	115.1	90.48		0.001
		Bushings (Including C.T.'s)	10	0.0027	12,261	1,226.1	520.73		0.038
		Windings	2	0.0005	93	46.4	46.35		0.000
		On-Load Tap Changer	5	0.0014	661	132.1	45.57		0.002
		Core	4	0.0011	26	6.4	2.10		0.000
		Leads	0		0				0.000
		Cooling Equipment	18	0.0049	7,397	410.9	28.04		0.023
		Auxiliary Equipment	7	0.0019	559	79.8	6.25		0.002
		All Integral Subcomponents	50	0.0136	21,457	429.1	29.18	429.1	0.067
		Control And Protection Equipment	28	0.0076	841	30.0	3.66		0.003
		Surge Arrester	1	0.0003	7	7.0	7.00		0.000
		Bus	26	0.0071	3,768	144.9	3.53		0.012
		Disconnect	13	0.0035	4,107	315.9	6.05		0.013
		Circuit Switcher	2	0.0005	1,091	545.3	545.28		0.003
		Current Transformer (Free Standing)	0		0				0.000
		Potential Devices	2	0.0005	168	84.1	84.07		0.000
		Motor-Operated Ground Switch	0		0				0.000
		Other	6	0.0016	159	26.4	6.49		0.000
		Unknown	9	0.0024	893	99.2	1.35		0.003
		All Terminal Equipment	87	0.0235	11,034	126.8	4.37	126.8	0.034



Frequency of forced outages involving integral subcomponents & terminal equipment of 110 - 149 kV transformer banks by tank arrangements

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
One three-phase element	3,403								
		Other	27	0.0079	4,341	160.8	7.38		0.014
		Bushings (Including C.T.'s)	81	0.0238	9,580	118.3	19.17		0.032
		Windings	4	0.0012	25,883	6,470.7	8,394.68		0.089
		On-Load Tap Changer	34	0.0100	7,663	225.4	23.31		0.026
		Core	12	0.0035	966	80.5	8.08		0.003
		Leads	2	0.0006	6	2.9	2.88		0.000
		Cooling Equipment	21	0.0062	3,754	178.7	27.83		0.013
		Auxiliary Equipment	19	0.0056	1,629	85.7	6.85		0.005
		All Integral Subcomponents	200	0.0588	53,822	269.1	18.49	269.1	0.181
		Control And Protection Equipment	125	0.0367	12,134	97.1	4.63		0.041
		Surge Arrester	18	0.0053	1,696	94.2	11.58		0.006
		Bus	71	0.0209	4,098	57.7	4.20		0.014
		Disconnect	39	0.0115	11,224	287.8	30.32		0.038
		Circuit Switcher	5	0.0015	36	7.1	4.27		0.000
		Current Transformer (Free Standing)	3	0.0009	98	32.8	42.52		0.000
		Potential Devices	7	0.0021	1,461	208.7	174.32		0.005
		Motor-Operated Ground Switch	0		0				0.000
		Other	28	0.0082	2,838	101.4	21.38		0.009

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Unknown	34	0.0100	4,674	137.5	16.13		0.016
		All Terminal Equipment	330	0.0971	38,259	115.9	7.35	115.9	0.129

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

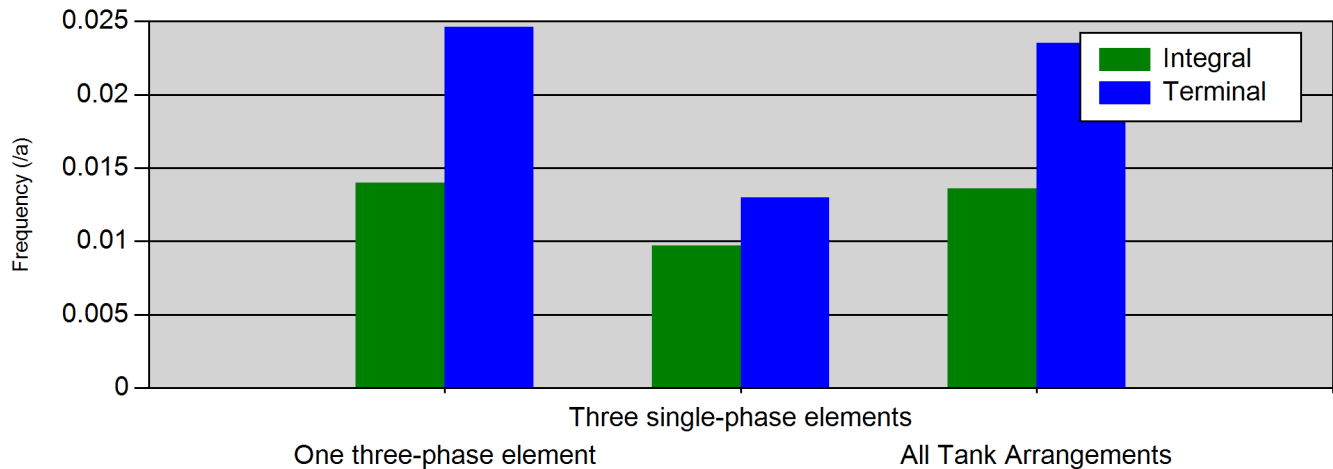
TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Three single-phase elements	73								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Windings	0		0				0.000
		On-Load Tap Changer	0		0				0.000
		Core	0		0				0.000
		Leads	0		0				0.000
		Cooling Equipment	1	0.0137	19	19.5	19.48		0.003
		Auxiliary Equipment	2	0.0274	91	45.5	45.52		0.014
		All Integral Subcomponents	3	0.0411	110	36.8	26.03	36.8	0.017
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Devices	0		0				0.000
		Motor-Operated Ground Switch	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Tank Arrangements	3,476								
		Other	27	0.0078	4,341	160.8	7.38		0.014
		Bushings (Including C.T.'s)	81	0.0233	9,580	118.3	19.17		0.031
		Windings	4	0.0012	25,883	6,470.7	8,394.68		0.089
		On-Load Tap Changer	34	0.0098	7,663	225.4	23.31		0.025
		Core	12	0.0035	966	80.5	8.08		0.003
		Leads	2	0.0006	6	2.9	2.88		0.000
		Cooling Equipment	22	0.0063	3,773	171.5	24.50		0.012
		Auxiliary Equipment	21	0.0060	1,720	81.9	7.70		0.006
		All Integral Subcomponents	203	0.0585	53,932	265.7	19.17	265.7	0.177
		Control And Protection Equipment	125	0.0360	12,134	97.1	4.63		0.040
		Surge Arrester	18	0.0052	1,696	94.2	11.58		0.006
		Bus	71	0.0204	4,098	57.7	4.20		0.013
		Disconnect	39	0.0112	11,224	287.8	30.32		0.037
		Circuit Switcher	5	0.0014	36	7.1	4.27		0.000
		Current Transformer (Free Standing)	3	0.0009	98	32.8	42.52		0.000
		Potential Devices	7	0.0020	1,461	208.7	174.32		0.005
		Motor-Operated Ground Switch	0		0				0.000
		Other	28	0.0081	2,838	101.4	21.38		0.009
		Unknown	34	0.0098	4,674	137.5	16.13		0.015
		All Terminal Equipment	330	0.0950	38,259	115.9	7.35	115.9	0.126



Frequency of forced outages involving integral subcomponents & terminal equipment of 200 - 299 kV transformer banks by tank arrangements

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
One three-phase element	3,962	Other	36	0.0091	4,144	115.1	7.11		0.012
		Bushings (Including C.T.'s)	57	0.0144	10,352	181.6	25.23		0.030
		Windings	10	0.0025	887	88.7	12.66		0.003
		On-Load Tap Changer	47	0.0119	7,380	157.0	7.42		0.021
		Core	2	0.0005	11	5.3	5.28		0.000
		Leads	3	0.0008	2,266	755.2	375.75		0.007
		Cooling Equipment	21	0.0053	2,488	118.5	54.70		0.007
		Auxiliary Equipment	19	0.0048	4,893	257.5	50.53		0.014
		All Integral Subcomponents	195	0.0493	32,421	166.3	21.65	166.3	0.094
		Control And Protection Equipment	168	0.0424	14,292	85.1	4.43		0.041
		Surge Arrester	4	0.0010	535	133.7	143.23		0.002
		Bus	19	0.0048	5,555	292.4	86.10		0.016
		Disconnect	36	0.0091	13,972	388.1	55.37		0.040
		Circuit Switcher	4	0.0010	232	58.0	11.57		0.001
		Current Transformer (Free Standing)	6	0.0015	2,135	355.9	102.15		0.006
		Potential Devices	19	0.0048	1,865	98.1	46.97		0.005
		Motor-Operated Ground Switch	0		0				0.000
		Other	15	0.0038	2,950	196.7	16.73		0.009

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Unknown	43	0.0109	8,992	209.1	3.53		0.026
		All Terminal Equipment	314	0.0793	50,528	160.9	12.24	160.9	0.146

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

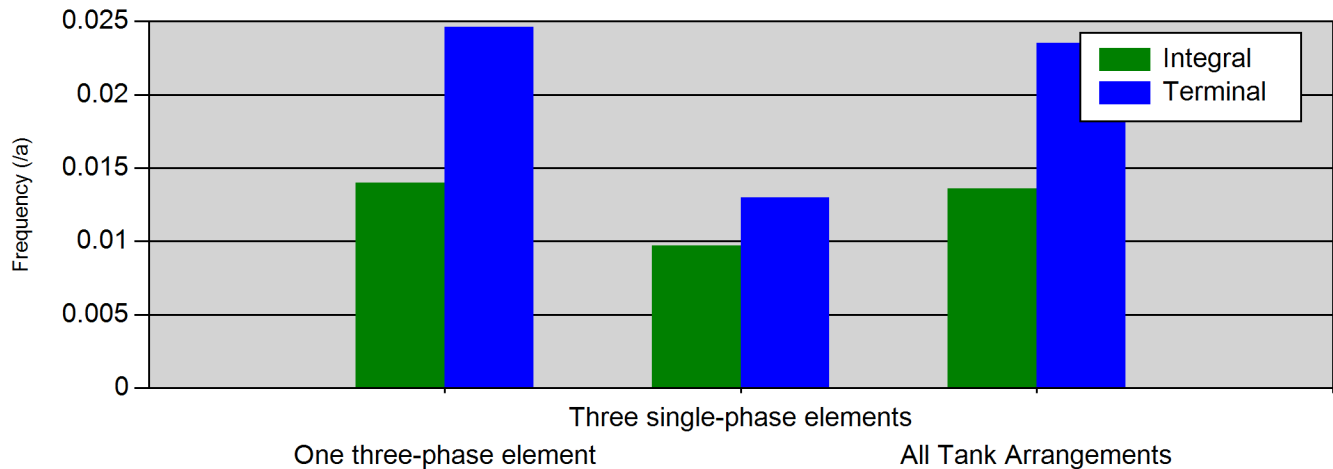
TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Three single-phase elements	86								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Windings	0		0				0.000
		On-Load Tap Changer	0		0				0.000
		Core	0		0				0.000
		Leads	0		0				0.000
		Cooling Equipment	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	0		0	0.0		0.0	0.000
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	3	0.0349	1,178	392.8	392.77		0.156
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Devices	0		0				0.000
		Motor-Operated Ground Switch	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	3	0.0349	1,178	392.8	392.77	392.8	0.156

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Tank Arrangements	4,048								
		Other	36	0.0089	4,144	115.1	7.11		0.012
		Bushings (Including C.T.'s)	57	0.0141	10,352	181.6	25.23		0.029
		Windings	10	0.0025	887	88.7	12.66		0.003
		On-Load Tap Changer	47	0.0116	7,380	157.0	7.42		0.021
		Core	2	0.0005	11	5.3	5.28		0.000
		Leads	3	0.0007	2,266	755.2	375.75		0.006
		Cooling Equipment	21	0.0052	2,488	118.5	54.70		0.007
		Auxiliary Equipment	19	0.0047	4,893	257.5	50.53		0.014
		All Integral Subcomponents	195	0.0482	32,421	166.3	21.65	166.3	0.091
		Control And Protection Equipment	168	0.0415	14,292	85.1	4.43		0.040
		Surge Arrester	4	0.0010	535	133.7	143.23		0.002
		Bus	19	0.0047	5,555	292.4	86.10		0.016
		Disconnect	39	0.0096	15,150	388.5	72.58		0.043
		Circuit Switcher	4	0.0010	232	58.0	11.57		0.001
		Current Transformer (Free Standing)	6	0.0015	2,135	355.9	102.15		0.006
		Potential Devices	19	0.0047	1,865	98.1	46.97		0.005
		Motor-Operated Ground Switch	0		0				0.000
		Other	15	0.0037	2,950	196.7	16.73		0.008
		Unknown	43	0.0106	8,992	209.1	3.53		0.025
		All Terminal Equipment	317	0.0783	51,706	163.1	12.82	163.1	0.146



Frequency of forced outages involving integral subcomponents & terminal equipment of 300 - 399 kV transformer banks by tank arrangements

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
One three-phase element	35								
		Other	1	0.0289	636	636.2	636.22		0.210
		Bushings (Including C.T.'s)	0		0				0.000
		Windings	0		0				0.000
		On-Load Tap Changer	0		0				0.000
		Core	0		0				0.000
		Leads	0		0				0.000
		Cooling Equipment	1	0.0289	167	167.4	167.40		0.055
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	2	0.0578	803	401.8	401.81	401.8	0.265
		Control And Protection Equipment	1	0.0289	91	91.2	91.17		0.030
		Surge Arrester	2	0.0578	5,535	2,767.5	2,767.52		1.826
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Devices	0		0				0.000
		Motor-Operated Ground Switch	0		0				0.000
		Other	0		0				0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Unknown	1	0.0289	8	8.1	8.05		0.003
		All Terminal Equipment	4	0.1156	5,634	1,408.6	49.61	1,408.6	1.859

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

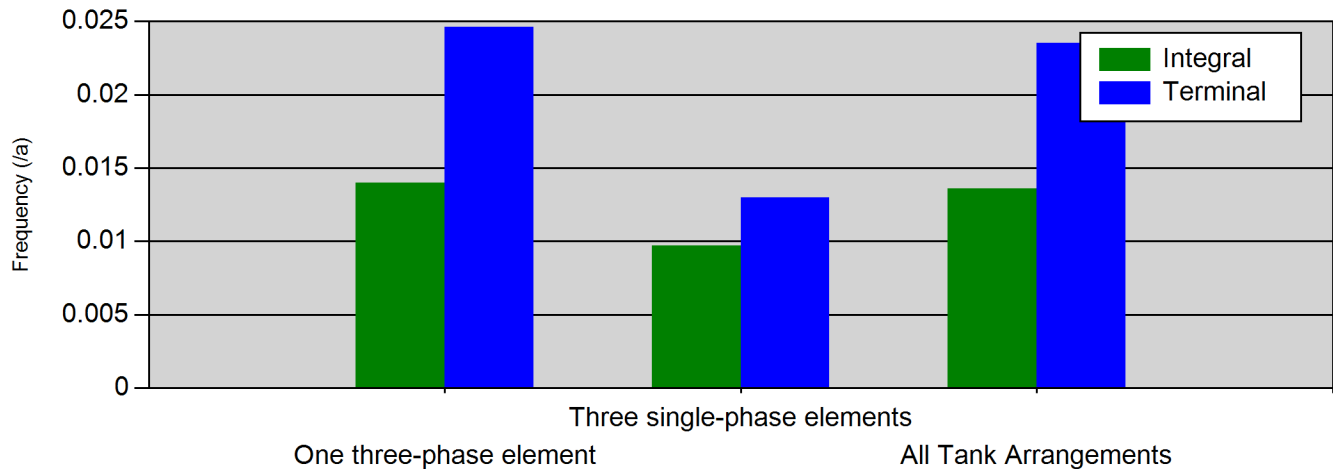
TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Three single-phase elements	10								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Windings	0		0				0.000
		On-Load Tap Changer	1	0.1000	3	2.7	2.72		0.003
		Core	0		0				0.000
		Leads	0		0				0.000
		Cooling Equipment	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	1	0.1000	3	2.7	2.72	2.7	0.003
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Devices	0		0				0.000
		Motor-Operated Ground Switch	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Tank Arrangements	45								
		Other	1	0.0224	636	636.2	636.22		0.163
		Bushings (Including C.T.'s)	0		0				0.000
		Windings	0		0				0.000
		On-Load Tap Changer	1	0.0224	3	2.7	2.72		0.001
		Core	0		0				0.000
		Leads	0		0				0.000
		Cooling Equipment	1	0.0224	167	167.4	167.40		0.043
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	3	0.0672	806	268.8	167.40	268.8	0.206
		Control And Protection Equipment	1	0.0224	91	91.2	91.17		0.023
		Surge Arrester	2	0.0449	5,535	2,767.5	2,767.52		1.419
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Devices	0		0				0.000
		Motor-Operated Ground Switch	0		0				0.000
		Other	0		0				0.000
		Unknown	1	0.0224	8	8.1	8.05		0.002
		All Terminal Equipment	4	0.0897	5,634	1,408.6	49.61	1,408.6	1.442



Frequency of forced outages involving integral subcomponents & terminal equipment of 500 - 599 kV transformer banks by tank arrangements

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
One three-phase element	197								
		Other	9	0.0456	4,217	468.6	31.22		0.244
		Bushings (Including C.T.'s)	1	0.0051	166	165.8	165.75		0.010
		Windings	2	0.0101	182	91.1	91.06		0.010
		On-Load Tap Changer	9	0.0456	353	39.2	9.33		0.020
		Core	0		0				0.000
		Leads	0		0				0.000
		Cooling Equipment	9	0.0456	1,405	156.1	8.13		0.081
		Auxiliary Equipment	4	0.0203	191	47.8	35.03		0.011
		All Integral Subcomponents	34	0.1723	6,514	191.6	20.84	191.6	0.377
		Control And Protection Equipment	21	0.1065	2,871	136.7	63.65		0.166
		Surge Arrester	1	0.0051	282	282.4	282.40		0.016
		Bus	1	0.0051	457	456.9	456.88		0.027
		Disconnect	5	0.0254	654	130.7	70.82		0.038
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Devices	4	0.0203	404	100.9	84.03		0.023
		Motor-Operated Ground Switch	0		0				0.000
		Other	0		0				0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Unknown	0		0				0.000
		All Terminal Equipment	32	0.1624	4,668	145.9	67.78	145.9	0.270

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

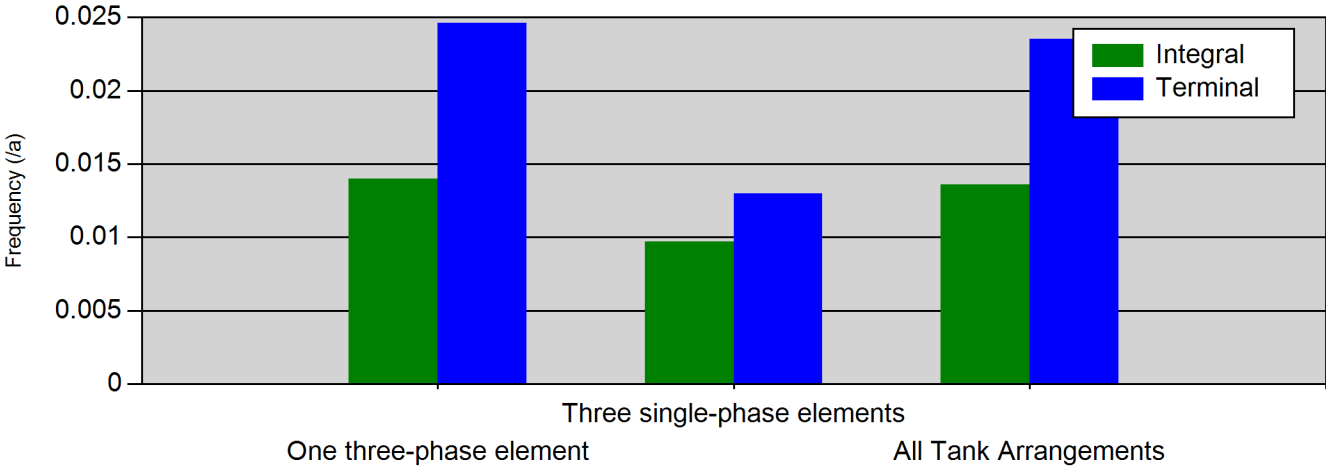
TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Three single-phase elements	253								
		Other	1	0.0040	495	495.3	495.33		0.023
		Bushings (Including C.T.'s)	2	0.0079	11	5.6	5.59		0.001
		Windings	1	0.0040	8	8.0	7.95		0.000
		On-Load Tap Changer	1	0.0040	26	26.5	26.50		0.001
		Core	0		0				0.000
		Leads	0		0				0.000
		Cooling Equipment	1	0.0040	3	2.6	2.58		0.000
		Auxiliary Equipment	3	0.0119	1,060	353.4	17.38		0.048
		All Integral Subcomponents	9	0.0358	1,603	178.2	9.92	178.2	0.073
		Control And Protection Equipment	53	0.2095	33,128	625.1	1.58		1.495
		Surge Arrester	0		0				0.000
		Bus	3	0.0119	26	8.7	8.67		0.001
		Disconnect	1	0.0040	0	0.3	0.25		0.000
		Circuit Switcher	3	0.0119	209	69.7	10.00		0.009
		Current Transformer (Free Standing)	2	0.0079	17	8.4	8.41		0.001
		Potential Devices	0		0				0.000
		Motor-Operated Ground Switch	0		0				0.000
		Other	0		0				0.000
		Unknown	2	0.0079	12	6.0	6.03		0.001
		All Terminal Equipment	64	0.2531	33,392	521.8	2.35	521.8	1.507

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

TANK ARRANGEMENT	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Tank Arrangements	450								
		Other	10	0.0222	4,712	471.2	76.54		0.119
		Bushings (Including C.T.'s)	3	0.0067	177	59.0	9.92		0.005
		Windings	3	0.0067	190	63.4	30.57		0.005
		On-Load Tap Changer	10	0.0222	379	37.9	10.63		0.010
		Core	0		0				0.000
		Leads	0		0				0.000
		Cooling Equipment	10	0.0222	1,408	140.8	5.68		0.036
		Auxiliary Equipment	7	0.0156	1,251	178.8	29.77		0.032
		All Integral Subcomponents	43	0.0956	8,117	188.8	11.92	188.8	0.206
		Control And Protection Equipment	74	0.1644	35,999	486.5	2.87		0.913
		Surge Arrester	1	0.0022	282	282.4	282.40		0.007
		Bus	4	0.0089	483	120.7	8.67		0.012
		Disconnect	6	0.0133	654	109.0	47.87		0.017
		Circuit Switcher	3	0.0067	209	69.7	10.00		0.005
		Current Transformer (Free Standing)	2	0.0044	17	8.4	8.41		0.000
		Potential Devices	4	0.0089	404	100.9	84.03		0.010
		Motor-Operated Ground Switch	0		0				0.000
		Other	0		0				0.000
		Unknown	2	0.0044	12	6.0	6.03		0.000
		All Terminal Equipment	96	0.2132	38,060	396.5	4.53	396.5	0.965



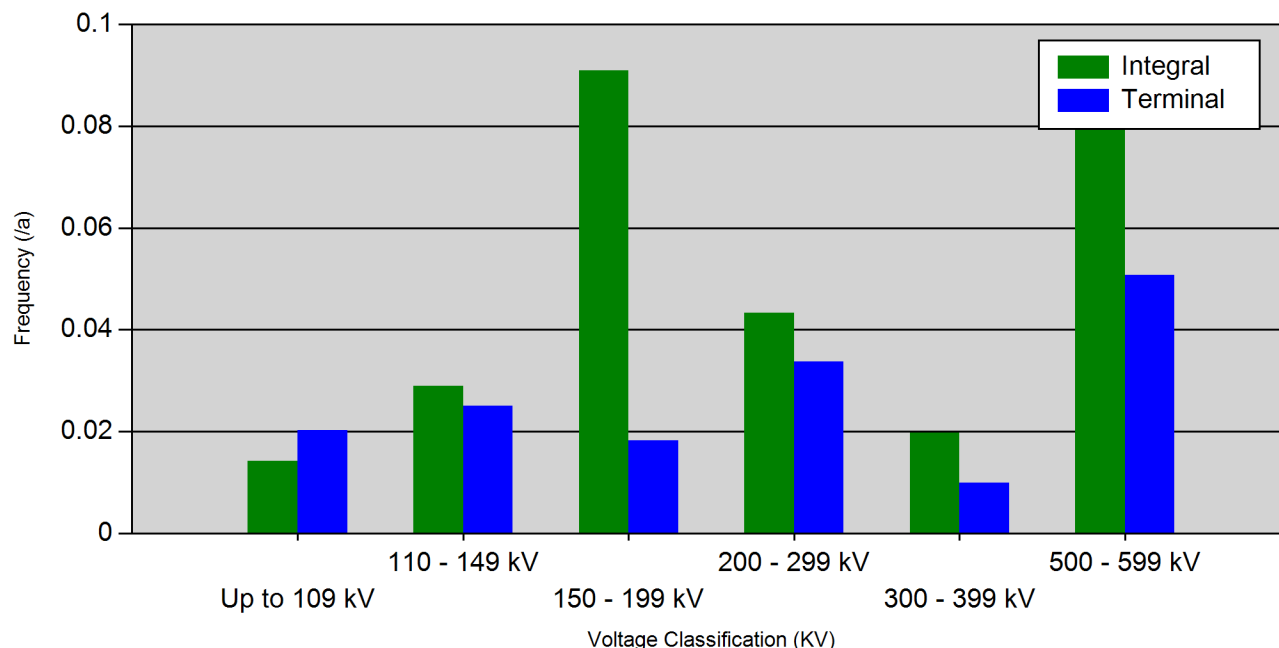
Frequency of forced outages involving integral subcomponents & terminal equipment of 600 - 799 kV transformer banks by tank arrangements

No Data

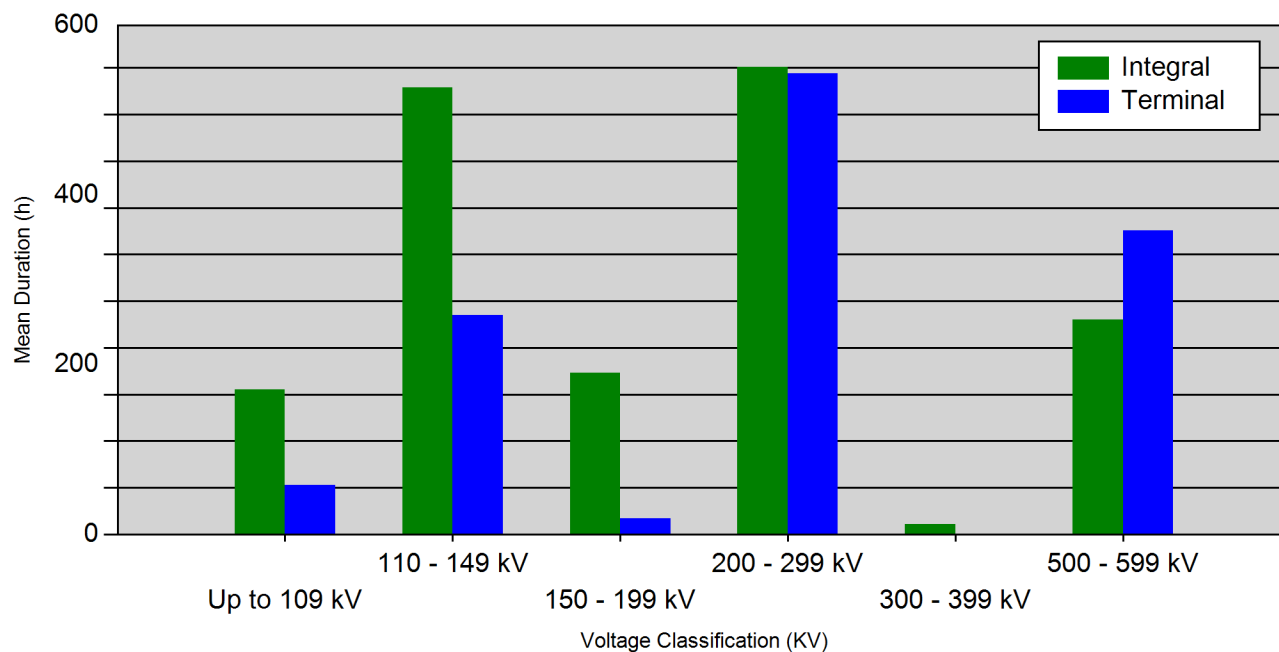
The title of the circuit breaker performance statistics listing is:

TA-RP40: Circuit Breaker Analysis by Voltage Classification and Subcomponent

Readers should note that when no outages are attributed to a subcomponent or primary cause, the columns for related statistics are left blank.

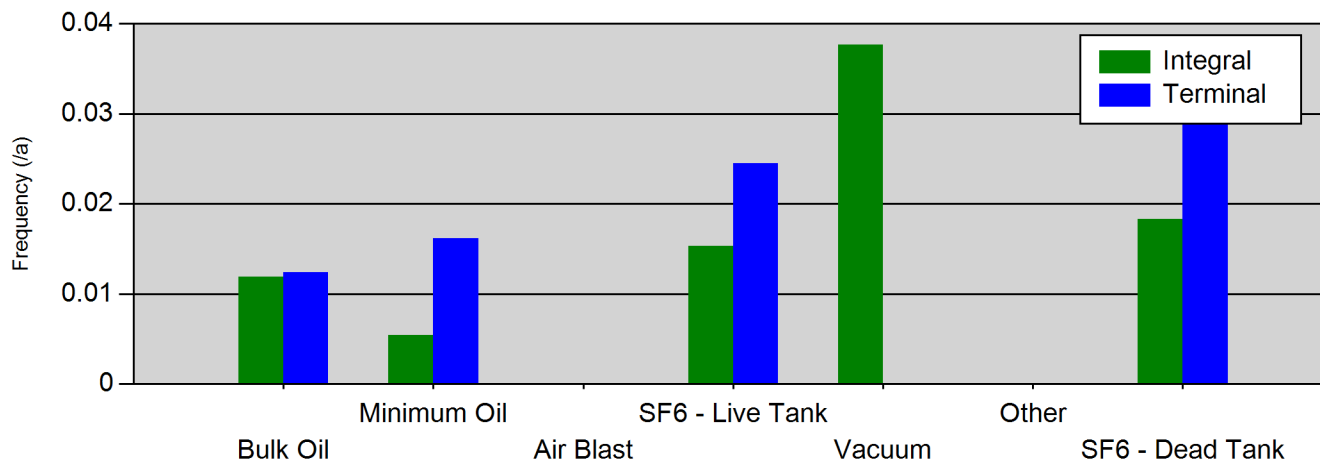


Frequency of forced outages of circuit breakers by voltage classification and subcomponent.



Mean Duration of forced outages of circuit breakers by voltage classification and subcomponent.

Circuit Breaker Analysis by Voltage Classification and Subcomponent



Frequency of forced outages involving integral subcomponents & terminal equipment of Up to 109 kV circuit breakers by interrupting mediums

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Bulk Oil	1,526	Other	3	0.0020	24	8.1	3.85		0.000
		Bushings (Including C.T.'s)	1	0.0007	491	491.3	491.28		0.004
		Operating Mechanisms	11	0.0072	6,084	553.1	211.63		0.045
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	1	0.0007	265	264.8	264.83		0.002
		Auxiliary Equipment	2	0.0013	13	6.7	6.67		0.000
		All Integral Subcomponents	18	0.0119	6,877	382.1	15.72	382.1	0.052

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	4	0.0026	546	136.4	36.41		0.004
		Surge Arrester	0		0				0.000
		Bus	2	0.0013	332	166.1	166.12		0.002
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	13	0.0085	2,870	220.8	0.92		0.021
		All Terminal Equipment	19	0.0124	3,748	197.3	0.97	197.3	0.028

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12
Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Minimum Oil	185								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	1	0.0054	1,113	1,113.1	1,113.13		0.069
		Operating Mechanisms	0		0				0.000
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	1	0.0054	1,113	1,113.1	1,113.13	1,113.1	0.069

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	1	0.0054	0	0.0	0.03		0.000
		Surge Arrester	0		0				0.000
		Bus	1	0.0054	856	856.0	856.00		0.053
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	1	0.0054	5	5.3	5.30		0.000
		All Terminal Equipment	3	0.0162	861	287.1	5.30	287.1	0.053

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Air Blast	5								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	0		0				0.000
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12
Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Live Tank	326								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	2	0.0061	24	12.2	12.18		0.001
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	3	0.0092	259	86.2	47.28		0.009
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	5	0.0153	283	56.6	16.35	56.6	0.010

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	8	0.0245	20	2.6	0.86		0.001
		All Terminal Equipment	8	0.0245	20	2.6	0.86	2.6	0.001

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Vacuum	133								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	0		0				0.000
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	5	0.0377	2	0.4	0.45		0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	5	0.0377	2	0.4	0.45	0.4	0.000

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12
Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Other	358								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	0		0				0.000
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Dead Tank	1,758								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	4	0.0023	36	9.0	9.38		0.000
		Operating Mechanisms	5	0.0028	1,109	221.8	102.32		0.007
		Interruptors	1	0.0006	46	45.6	45.55		0.000
		Insulation System (Support Insulators)	8	0.0046	323	40.4	11.97		0.002
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	13	0.0074	623	47.9	3.62		0.004
		Auxiliary Equipment	1	0.0006	5	4.6	4.60		0.000
		All Integral Subcomponents	32	0.0183	2,142	66.9	6.78	66.9	0.014

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	11	0.0063	33	3.0	0.07		0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	46	0.0262	362	7.9	0.83		0.002
		All Terminal Equipment	57	0.0325	395	6.9	0.83	6.9	0.003

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

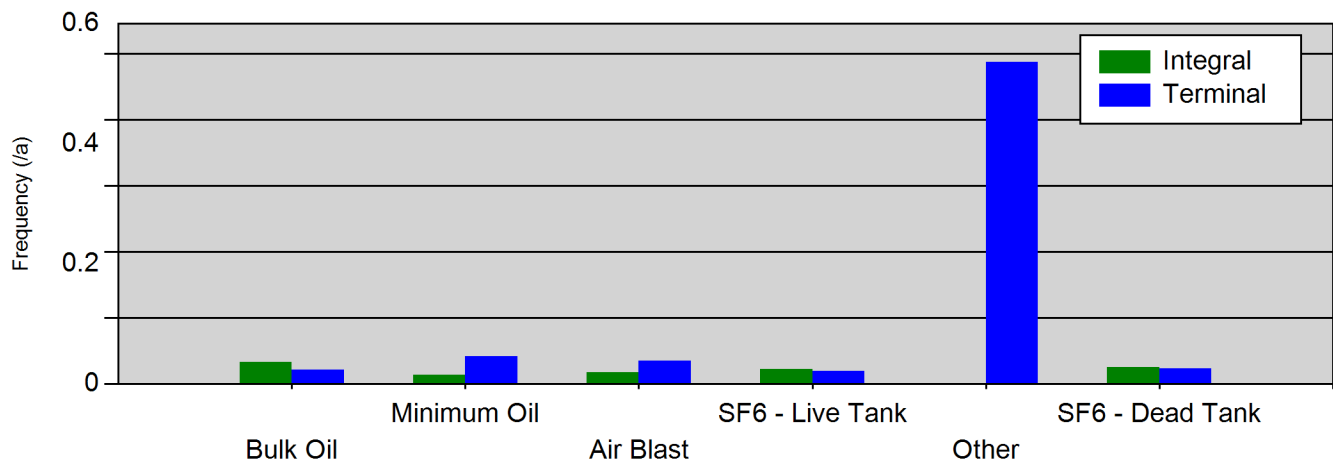
INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Interrupting Media	4,290								
		Other	3	0.0007	24	8.1	3.85		0.000
		Bushings (Including C.T.'s)	6	0.0014	1,640	273.4	12.90		0.004
		Operating Mechanisms	18	0.0042	7,217	400.9	59.33		0.019
		Interruptors	1	0.0002	46	45.6	45.55		0.000
		Insulation System (Support Insulators)	8	0.0019	323	40.4	11.97		0.001
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	22	0.0051	1,148	52.2	3.58		0.003
		Auxiliary Equipment	3	0.0007	18	6.0	4.60		0.000
		All Integral Subcomponents	61	0.0142	10,416	170.8	11.20	170.8	0.028

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: Up to 109 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	16	0.0037	579	36.2	0.11		0.002
		Surge Arrester	0		0				0.000
		Bus	3	0.0007	1,188	396.1	331.07		0.003
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	68	0.0159	3,258	47.9	0.83		0.009
		All Terminal Equipment	87	0.0203	5,025	57.8	0.83	57.8	0.013



Frequency of forced outages involving integral subcomponents & terminal equipment of 110 - 149 kV circuit breakers by interrupting mediums

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Bulk Oil	1,772	Other	1	0.0006	0	0.0	0.03		0.000
		Bushings (Including C.T.'s)	2	0.0011	2	1.0	0.95		0.000
		Operating Mechanisms	30	0.0169	8,785	292.8	23.03		0.056
		Interruptors	3	0.0017	2,026	675.3	797.68		0.013
		Insulation System (Support Insulators)	3	0.0017	175	58.2	3.50		0.001
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	14	0.0079	5,770	412.1	73.63		0.037
		Auxiliary Equipment	11	0.0062	708	64.4	6.25		0.005
		All Integral Subcomponents	64	0.0361	17,466	272.9	22.28	272.9	0.112

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	23	0.0130	1,240	53.9	20.95		0.008
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	7	0.0040	3,122	446.0	48.00		0.020
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	1	0.0006	0	0.5	0.50		0.000
		Potential Device	2	0.0011	5	2.6	2.56		0.000
		Other	0		0				0.000
		Unknown	8	0.0045	736	92.0	0.58		0.005
		All Terminal Equipment	41	0.0232	5,103	124.5	4.15	124.5	0.033

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12
Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Minimum Oil	198								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	3	0.0152	265	88.3	52.33		0.015
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	3	0.0152	265	88.3	52.33	88.3	0.015

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	5	0.0253	21	4.3	0.42		0.001
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	1	0.0051	6,127	6,126.7	6,126.65		0.357
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	3	0.0152	1	0.4	0.50		0.000
		All Terminal Equipment	9	0.0456	6,149	683.2	0.50	683.2	0.356

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Air Blast	52								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	0		0				0.000
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	1	0.0193	5	4.8	4.80		0.001
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	1	0.0193	5	4.8	4.80	4.8	0.001

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	2	0.0385	72	36.2	0.72		0.016
		All Terminal Equipment	2	0.0385	72	36.2	0.72	36.2	0.016

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Live Tank	1,665								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	12	0.0072	49,669	4,139.0	2,669.73		0.340
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	6	0.0036	16	2.6	3.40		0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	23	0.0138	9,032	392.7	23.67		0.062
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	41	0.0246	58,717	1,432.1	23.11	1,432.1	0.402

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	14	0.0084	28	2.0	1.62		0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	3	0.0018	86	28.7	0.17		0.001
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	2	0.0012	333	166.3	166.32		0.002
		Potential Device	0		0				0.000
		Other	2	0.0012	78	39.1	39.13		0.001
		Unknown	15	0.0090	1,619	107.9	0.98		0.011
		All Terminal Equipment	36	0.0216	2,144	59.5	1.08	59.5	0.015

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12
Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Other	4								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	0		0				0.000
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	2	0.5364	860	429.9	429.93		2.633
		All Terminal Equipment	2	0.5364	860	429.9	429.93	429.9	2.633

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Dead Tank	3,888								
		Other	3	0.0008	452	150.8	196.15		0.001
		Bushings (Including C.T.'s)	1	0.0003	0	0.1	0.08		0.000
		Operating Mechanisms	29	0.0075	14,624	504.3	160.63		0.043
		Interruptors	4	0.0010	6,042	1,510.4	1,406.25		0.017
		Insulation System (Support Insulators)	13	0.0033	4,352	334.8	4.57		0.013
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	45	0.0116	10,381	230.7	6.68		0.031
		Auxiliary Equipment	15	0.0039	3,050	203.4	6.17		0.009
		All Integral Subcomponents	110	0.0284	38,901	353.6	24.29	353.6	0.115

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	55	0.0141	16,632	302.4	9.20		0.049
		Surge Arrester	0		0				0.000
		Bus	1	0.0003	46	45.6	45.55		0.000
		Disconnect	11	0.0028	14,097	1,281.5	672.83		0.041
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	4	0.0010	402	100.5	96.64		0.001
		Potential Device	1	0.0003	701	700.7	700.73		0.002
		Other	1	0.0003	5	4.9	4.85		0.000
		Unknown	26	0.0067	2,658	102.2	1.14		0.008
		All Terminal Equipment	99	0.0255	34,541	348.9	5.67	348.9	0.102

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

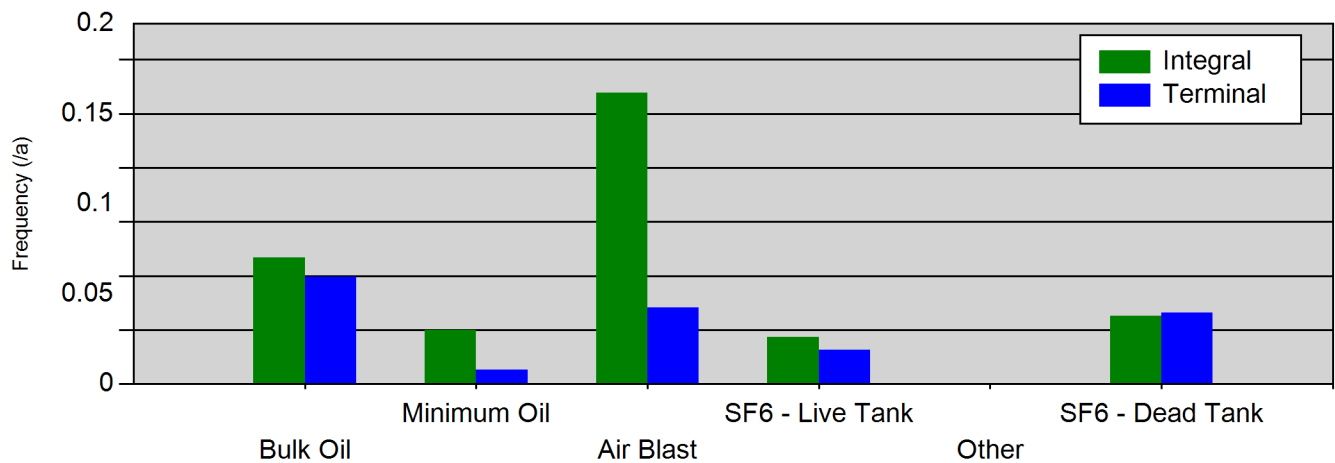
INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Interrupting Media	7,578								
		Other	4	0.0005	452	113.1	98.18		0.001
		Bushings (Including C.T.'s)	3	0.0004	2	0.7	0.32		0.000
		Operating Mechanisms	74	0.0098	73,342	991.1	117.00		0.111
		Interruptors	7	0.0009	8,068	1,152.5	797.68		0.012
		Insulation System (Support Insulators)	22	0.0029	4,542	206.5	3.50		0.007
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	83	0.0110	25,187	303.5	11.83		0.038
		Auxiliary Equipment	26	0.0034	3,759	144.6	6.18		0.006
		All Integral Subcomponents	219	0.0289	115,352	526.7	23.03	526.7	0.174

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 110 - 149 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	97	0.0128	17,921	184.8	5.67		0.027
		Surge Arrester	0		0				0.000
		Bus	1	0.0001	46	45.6	45.55		0.000
		Disconnect	21	0.0028	17,305	824.1	553.08		0.026
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	8	0.0011	6,862	857.7	166.32		0.011
		Potential Device	3	0.0004	706	235.3	3.25		0.001
		Other	3	0.0004	83	27.7	39.13		0.000
		Unknown	56	0.0074	5,946	106.2	0.78		0.009
		All Terminal Equipment	189	0.0250	48,869	258.6	2.57	258.6	0.074



Frequency of forced outages involving integral subcomponents & terminal equipment of 200 - 299 kV circuit breakers by interrupting mediums

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Bulk Oil	724	Other	0		0				0.000
		Bushings (Including C.T.'s)	4	0.0055	1,712	427.9	120.25		0.027
		Operating Mechanisms	12	0.0166	7,533	627.8	207.68		0.119
		Interruptors	3	0.0041	2,985	994.9	1,253.35		0.047
		Insulation System (Support Insulators)	3	0.0041	200	66.8	24.32		0.003
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	8	0.0110	1,278	159.8	41.43		0.020
		Auxiliary Equipment	21	0.0290	1,199	57.1	30.17		0.019
		All Integral Subcomponents	51	0.0703	14,907	292.3	46.30	292.3	0.235

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	31	0.0428	4,694	151.4	23.65		0.074
		Surge Arrester	0		0				0.000
		Bus	1	0.0014	310	309.7	309.72		0.005
		Disconnect	7	0.0097	5,740	820.1	1,131.08		0.091
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	1	0.0014	117	117.2	117.18		0.002
		Potential Device	1	0.0014	839	838.7	838.65		0.013
		Other	0		0				0.000
		Unknown	2	0.0028	5	2.3	2.33		0.000
		All Terminal Equipment	43	0.0595	11,705	272.2	27.67	272.2	0.185

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Minimum Oil	500								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	5	0.0100	6,960	1,392.1	839.67		0.159
		Interruptors	2	0.0040	2,594	1,297.0	1,297.03		0.059
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	2	0.0040	173	86.7	86.73		0.004
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	6	0.0120	74	12.3	0.46		0.002
		All Integral Subcomponents	15	0.0300	9,801	653.5	5.60	653.5	0.224

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	3	0.0060	89	29.7	19.92		0.002
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	1	0.0020	226	225.6	225.57		0.005
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	4	0.0080	315	78.6	44.28	78.6	0.007

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Air Blast	470								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	1	0.0021	0	0.0	0.02		0.000
		Operating Mechanisms	10	0.0213	3,450	345.0	33.84		0.084
		Interruptors	2	0.0043	769	384.5	384.53		0.019
		Insulation System (Support Insulators)	1	0.0021	2	1.5	1.50		0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	41	0.0873	3,048	74.3	21.58		0.074
		Auxiliary Equipment	21	0.0447	1,090	51.9	28.57		0.026
		All Integral Subcomponents	76	0.1618	8,359	110.0	23.78	110.0	0.203

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	8	0.0170	205	25.6	19.36		0.005
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	5	0.0106	13,908	2,781.5	459.87		0.337
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	3	0.0064	1,558	519.5	502.63		0.038
		Potential Device	1	0.0021	28	28.2	28.17		0.001
		Other	1	0.0021	42	42.1	42.07		0.001
		Unknown	2	0.0043	6	3.2	2.22		0.000
		All Terminal Equipment	20	0.0425	15,747	787.4	25.69	787.4	0.382

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Live Tank	2,285								
		Other	4	0.0018	2,887	721.7	511.07		0.015
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	7	0.0031	633	90.5	30.22		0.003
		Interruptors	5	0.0022	10,937	2,187.4	463.68		0.055
		Insulation System (Support Insulators)	3	0.0013	17	5.6	5.25		0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	36	0.0158	3,701	102.8	8.99		0.019
		Auxiliary Equipment	4	0.0018	467	116.9	16.78		0.002
		All Integral Subcomponents	59	0.0260	18,642	316.0	15.60	316.0	0.094

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	25	0.0109	3,851	154.0	2.48		0.019
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	5	0.0022	2,240	448.0	358.47		0.011
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	4	0.0018	1,358	339.4	337.41		0.007
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	9	0.0039	354	39.3	2.53		0.002
		All Terminal Equipment	43	0.0188	7,803	181.4	5.65	181.4	0.039

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Other	45								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	0		0				0.000
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12
Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Dead Tank	4,589								
		Other	2	0.0004	119	59.5	59.47		0.000
		Bushings (Including C.T.'s)	10	0.0022	32,669	3,266.9	1,400.81		0.082
		Operating Mechanisms	37	0.0081	49,203	1,329.8	278.53		0.123
		Interruptors	6	0.0013	10,192	1,698.7	631.80		0.025
		Insulation System (Support Insulators)	19	0.0041	22,396	1,178.8	23.35		0.055
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	66	0.0144	12,298	186.3	9.48		0.031
		Auxiliary Equipment	33	0.0072	27,496	833.2	77.33		0.068
		All Integral Subcomponents	173	0.0377	154,373	892.3	97.72	892.3	0.384

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	98	0.0214	52,618	536.9	21.67		0.131
		Surge Arrester	0		0				0.000
		Bus	1	0.0002	57	57.5	57.47		0.000
		Disconnect	62	0.0135	68,587	1,106.2	364.24		0.170
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	1	0.0002	121	120.6	120.58		0.000
		Unknown	19	0.0041	1,180	62.1	3.33		0.003
		All Terminal Equipment	181	0.0394	122,563	677.1	61.88	677.1	0.305

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

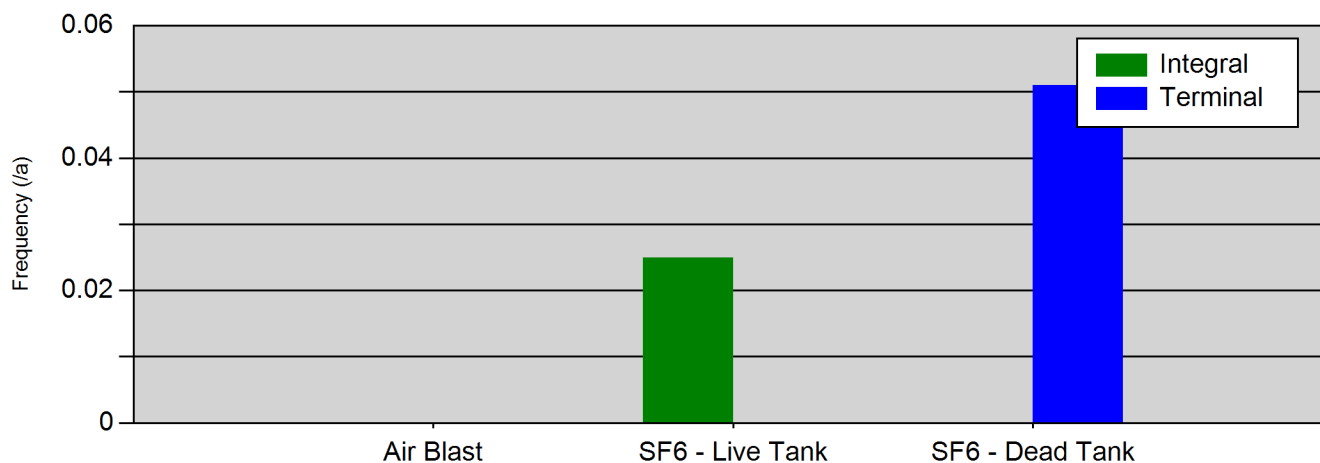
INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Interrupting Media	8,612								
		Other	6	0.0007	3,006	500.9	210.38		0.004
		Bushings (Including C.T.'s)	15	0.0017	34,381	2,292.0	1,075.32		0.044
		Operating Mechanisms	71	0.0082	67,780	954.6	187.78		0.089
		Interruptors	18	0.0021	27,477	1,526.5	493.48		0.037
		Insulation System (Support Insulators)	26	0.0030	22,615	869.8	16.25		0.030
		Resistors Or Grading Capacitors	2	0.0002	173	86.7	86.73		0.000
		Interrupting Medium	151	0.0175	20,326	134.6	11.45		0.027
		Auxiliary Equipment	85	0.0099	30,326	356.8	24.43		0.040
		All Integral Subcomponents	374	0.0433	206,084	551.0	30.87	551.0	0.272

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 200 - 299 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	165	0.0192	61,457	372.5	15.78		0.082
		Surge Arrester	0		0				0.000
		Bus	2	0.0002	367	183.6	183.59		0.000
		Disconnect	79	0.0092	90,475	1,145.3	379.77		0.120
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	9	0.0010	3,259	362.1	225.57		0.004
		Potential Device	2	0.0002	867	433.4	433.41		0.001
		Other	2	0.0002	163	81.3	81.33		0.000
		Unknown	32	0.0037	1,545	48.3	2.40		0.002
		All Terminal Equipment	291	0.0337	158,133	543.4	42.07	543.4	0.209



Frequency of forced outages involving integral subcomponents & terminal equipment of 300 - 399 kV circuit breakers by interrupting mediums

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Air Blast	1								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	0		0				0.000
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Live Tank	80								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	1	0.0125	20	20.4	20.43		0.003
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	1	0.0125	3	3.1	3.05		0.000
		All Integral Subcomponents	2	0.0250	23	11.7	11.74	11.7	0.003

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12
Voltage Classification: 300 - 399 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12
Voltage Classification: 300 - 399 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Dead Tank	20								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	0		0				0.000
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	1	0.0510	1	0.7	0.70		0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	1	0.0510	1	0.7	0.70	0.7	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

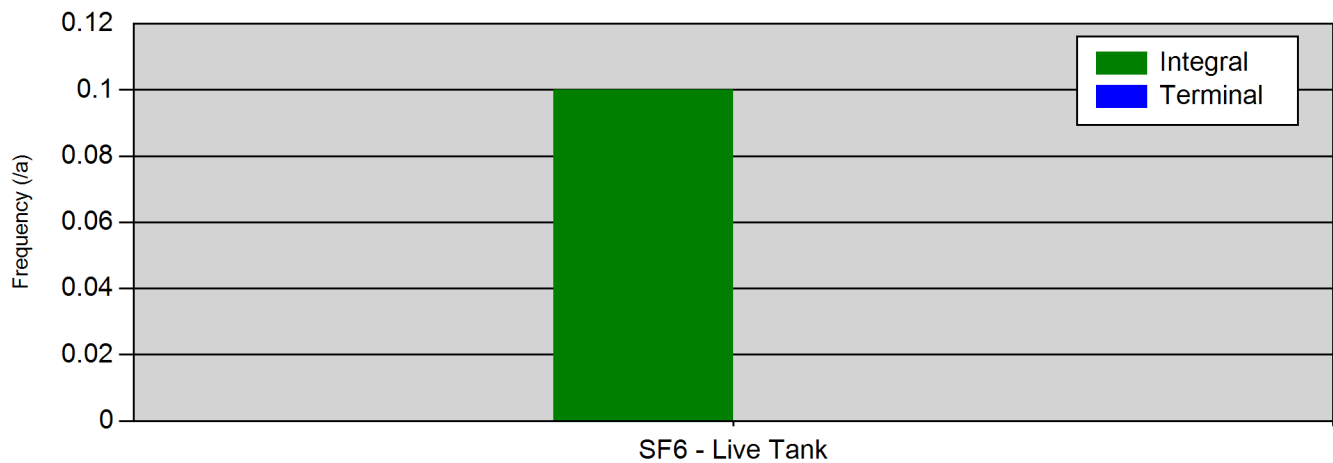
INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Interrupting Media	101								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	1	0.0099	20	20.4	20.43		0.002
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	1	0.0099	3	3.1	3.05		0.000
		All Integral Subcomponents	2	0.0198	23	11.7	11.74	11.7	0.003

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 300 - 399 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	1	0.0099	1	0.7	0.70		0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	1	0.0099	1	0.7	0.70	0.7	0.000



Frequency of forced outages involving integral subcomponents & terminal equipment of 400 - 499 kV circuit breakers by interrupting mediums

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 400 - 499 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Live Tank	10								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	1	0.1000	29	29.5	29.48		0.034
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	1	0.1000	29	29.5	29.48	29.5	0.034

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 400 - 499 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 400 - 499 kV

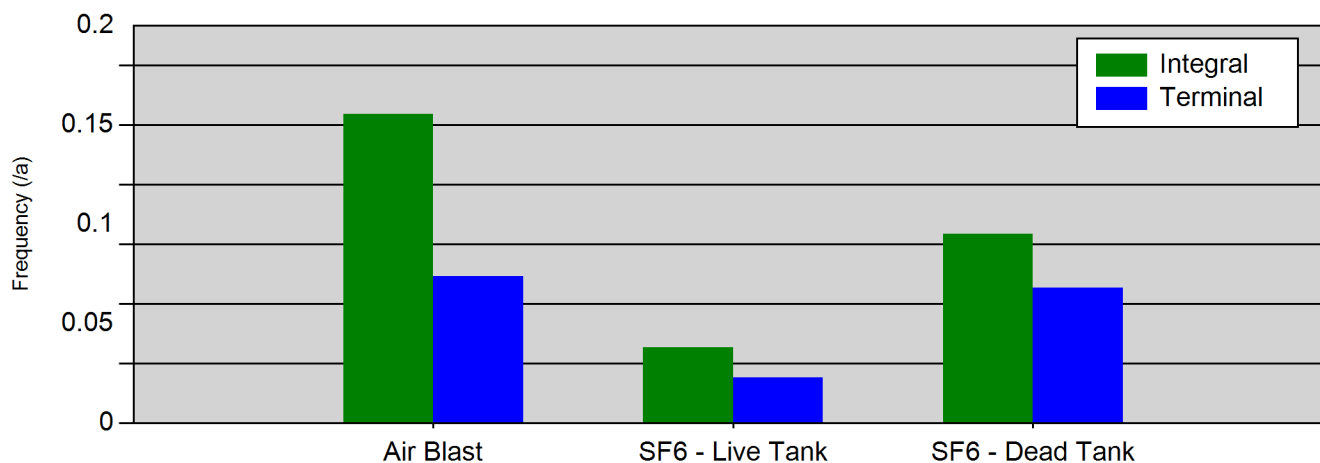
INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Interrupting Media	10								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	1	0.1000	29	29.5	29.48		0.034
		Interruptors	0		0				0.000
		Insulation System (Support Insulators)	0		0				0.000
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	0		0				0.000
		Auxiliary Equipment	0		0				0.000
		All Integral Subcomponents	1	0.1000	29	29.5	29.48	29.5	0.034

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 400 - 499 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	0		0				0.000
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	0		0				0.000
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	0		0				0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	0		0				0.000
		All Terminal Equipment	0		0	0.0		0.0	0.000



Frequency of forced outages involving integral subcomponents & terminal equipment of 500 - 599 kV circuit breakers by interrupting mediums

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Air Blast	245	Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	4	0.0164	1,413	353.3	106.08		0.066
		Interruptors	1	0.0041	160	160.0	160.03		0.007
		Insulation System (Support Insulators)	3	0.0123	12	4.1	3.67		0.001
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	23	0.0941	2,062	89.6	73.15		0.096
		Auxiliary Equipment	7	0.0286	759	108.4	27.03		0.035
		All Integral Subcomponents	38	0.1555	4,406	116.0	56.19	116.0	0.206

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	10	0.0409	2,002	200.2	49.72		0.093
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	3	0.0123	1,800	600.0	74.18		0.084
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	4	0.0164	4,557	1,139.3	1,062.48		0.213
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	1	0.0041	4	4.4	4.35		0.000
		All Terminal Equipment	18	0.0737	8,363	464.7	83.63	464.7	0.391

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Live Tank	657								
		Other	2	0.0030	6	2.9	2.93		0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	8	0.0122	11,977	1,497.1	1,299.72		0.209
		Interruptors	1	0.0015	484	484.0	484.00		0.008
		Insulation System (Support Insulators)	6	0.0091	1,451	241.8	152.61		0.025
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	7	0.0107	113	16.1	3.30		0.002
		Auxiliary Equipment	1	0.0015	168	167.7	167.72		0.003
		All Integral Subcomponents	25	0.0380	14,199	567.9	92.67	567.9	0.246

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	6	0.0091	2,002	333.7	24.29		0.035
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	1	0.0015	2,377	2,376.6	2,376.60		0.041
		Circuit Switcher	2	0.0030	429	214.4	214.43		0.007
		Current Transformer (Free Standing)	1	0.0015	3,000	3,000.2	3,000.23		0.051
		Potential Device	0		0				0.000
		Other	1	0.0015	219	219.2	219.15		0.004
		Unknown	4	0.0061	1,388	347.0	378.34		0.024
		All Terminal Equipment	15	0.0227	9,415	627.7	219.15	627.7	0.163

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
SF6 - Dead Tank	736								
		Other	0		0				0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	18	0.0245	2,610	145.0	2.37		0.041
		Interruptors	4	0.0054	3,755	938.8	1,228.92		0.058
		Insulation System (Support Insulators)	3	0.0041	4,619	1,539.6	65.55		0.072
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	23	0.0313	3,026	131.6	3.80		0.047
		Auxiliary Equipment	22	0.0299	1,028	46.7	19.60		0.016
		All Integral Subcomponents	70	0.0952	15,038	214.8	8.14	214.8	0.233

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	36	0.0489	3,474	96.5	17.48		0.054
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	6	0.0082	4,578	763.1	81.16		0.071
		Circuit Switcher	0		0				0.000
		Current Transformer (Free Standing)	2	0.0027	2	1.0	1.04		0.000
		Potential Device	0		0				0.000
		Other	0		0				0.000
		Unknown	6	0.0082	3,919	653.2	145.99		0.061
		All Terminal Equipment	50	0.0680	11,973	239.5	17.48	239.5	0.186

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
All Interrupting Media	1,637								
		Other	2	0.0012	6	2.9	2.93		0.000
		Bushings (Including C.T.'s)	0		0				0.000
		Operating Mechanisms	30	0.0183	16,000	533.3	25.02		0.111
		Interruptors	6	0.0037	4,399	733.2	856.46		0.031
		Insulation System (Support Insulators)	12	0.0073	6,082	506.8	15.58		0.042
		Resistors Or Grading Capacitors	0		0				0.000
		Interrupting Medium	53	0.0324	5,201	98.1	8.87		0.036
		Auxiliary Equipment	30	0.0183	1,954	65.1	19.60		0.014
		All Integral Subcomponents	133	0.0812	33,642	252.9	18.68	252.9	0.234

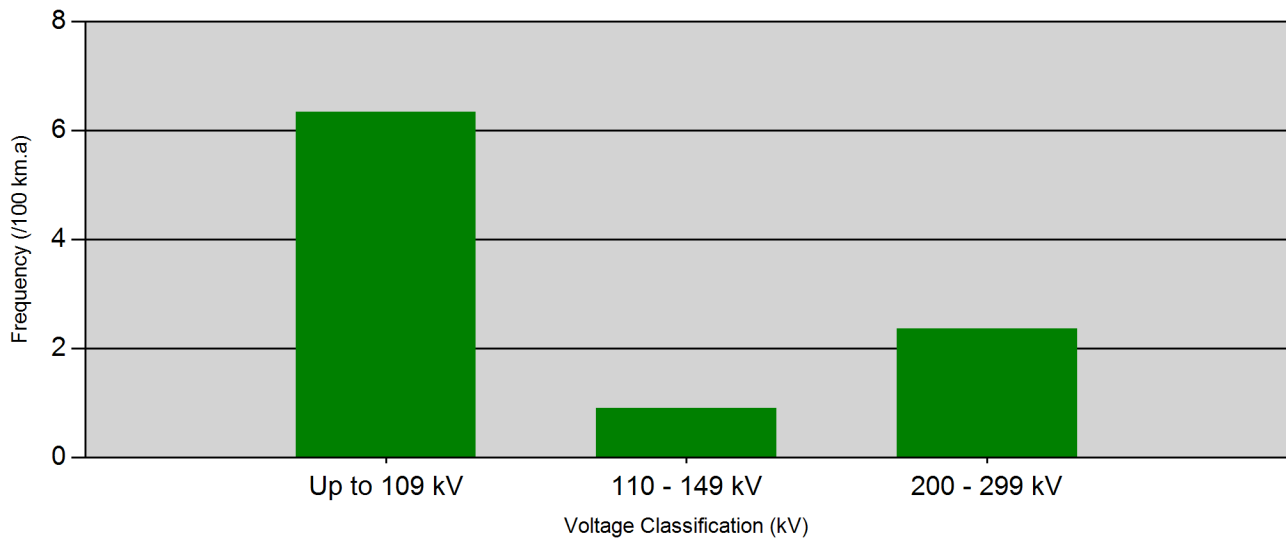
For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

Voltage Classification: 500 - 599 kV

INTERRUPTING MEDIUM	Component Years (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Control And Protection Equipment	52	0.0318	7,478	143.8	17.48		0.052
		Surge Arrester	0		0				0.000
		Bus	0		0				0.000
		Disconnect	10	0.0061	8,755	875.5	86.88		0.061
		Circuit Switcher	2	0.0012	429	214.4	214.43		0.003
		Current Transformer (Free Standing)	7	0.0043	7,560	1,079.9	608.00		0.053
		Potential Device	0		0				0.000
		Other	1	0.0006	219	219.2	219.15		0.002
		Unknown	11	0.0067	5,312	482.9	227.12		0.037
		All Terminal Equipment	83	0.0507	29,753	358.5	28.78	358.5	0.207

Readers should note that when no outages are attributed to a subcomponent or primary cause, the columns for related statistics are left blank



Frequency of cable-related forced outages by voltage classification.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

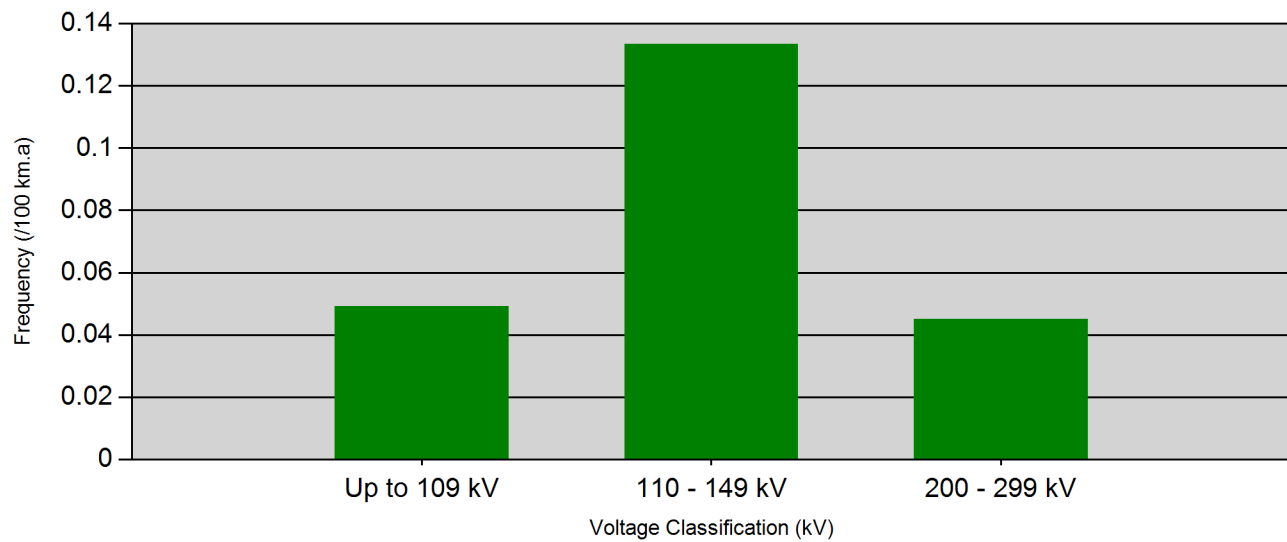
VOLTAGE CLASSIFICATION	KILOMETRE YEARS (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
Up to 109 kV	142							
		Other	0					
		Pothead	1	0.7042	180	179.7	179.67	1.444
		Joints	0					
		Conductor	0					
		Insulation System	8	5.6338	279	34.8	15.50	2.241
		Sheath	0					
		Auxiliary Equipment	0					
		All Integral Subcomponents	9	6.3380	458	50.9	27.08	3.685

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	KILOMETRE YEARS (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
110 - 149 kV	1,110							
		Other	0					
		Pothead	0					
		Joints	0					
		Conductor	1	0.0901	1,795	1,795.5	1,795.47	1.847
		Insulation System	9	0.8108	4,020	446.7	59.93	4.135
		Sheath	0					
		Auxiliary Equipment	0					
		All Integral Subcomponents	10	0.9009	5,816	581.6	69.31	5.981

For Data Submitted by: All Canada
For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	KILOMETRE YEARS (Km.a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER 100 Km.a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
200 - 299 kV	339							
		Other	3	0.8850	10	3.3	1.70	0.033
		Pothead	0					
		Joints	0					
		Conductor	0					
		Insulation System	4	1.1799	276	68.9	63.06	0.928
		Sheath	0					
		Auxiliary Equipment	1	0.2950	3	3.3	3.25	0.011
		All Integral Subcomponents	8	2.3599	289	36.1	2.57	0.972



Frequency of terminal-related forced outages by voltage classification.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	TERMINAL YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAILABILITY (%)
Up to 109 kV	142							
		Control And Protection Equipment	1	0.0070	0	0.2	0.20	0.000
		Surge Arrester	0					
		Bus	1	0.0070	0	0.1	0.08	0.000
		Disconnect	1	0.0070	1	1.1	1.13	0.000
		Circuit Switcher	0					
		Circuit Transformer (Free Standing)	0					
		Potential Device	1	0.0070	2	2.2	2.18	0.000
		Other	1	0.0070	242	242.0	241.98	0.020
		Unknown	2	0.0141	587	293.6	293.57	0.047
		All Terminal Equipment	7	0.0491	833	119.0	2.18	0.067

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

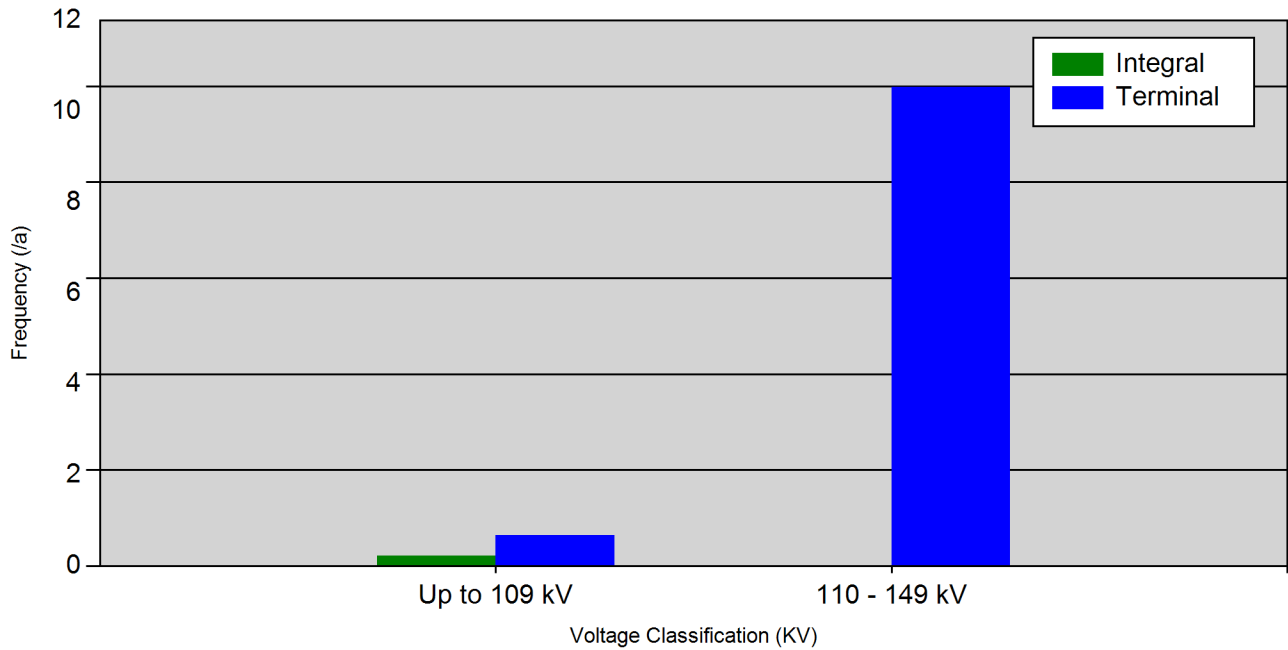
VOLTAGE CLASSIFICATION	TERMINAL YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
110 - 149 kV	285							
		Control And Protection Equipment	20	0.0702	1,638	81.9	8.85	0.066
		Surge Arrester	0					
		Bus	1	0.0035	1,949	1,948.6	1,948.63	0.078
		Disconnect	8	0.0281	1,353	169.1	88.73	0.054
		Circuit Switcher	1	0.0035	3,466	3,466.5	3,466.48	0.139
		Circuit Transformer (Free Standing)	0					
		Potential Device	1	0.0035	23	22.6	22.62	0.001
		Other	0					
		Unknown	7	0.0246	124	17.7	25.02	0.005
		All Terminal Equipment	38	0.1334	8,552	225.1	21.06	0.343

For Data Submitted by: All Canada

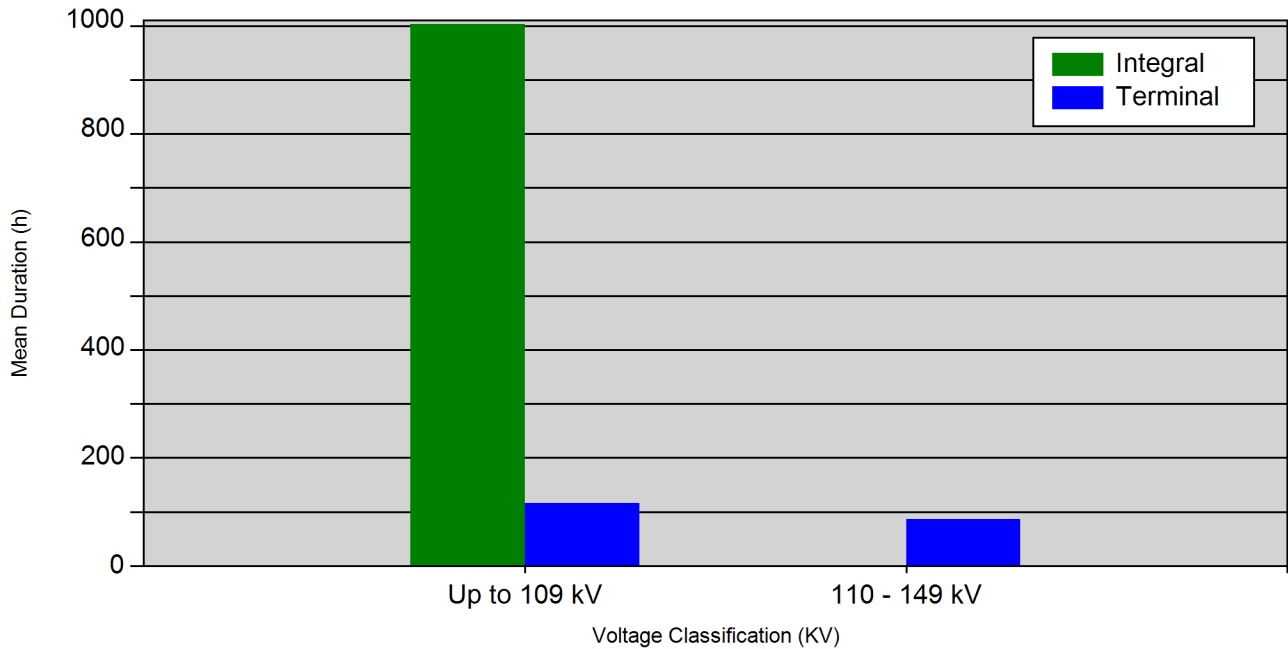
For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	TERMINAL YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	UNAVAIL ABILITY (%)
200 - 299 kV	111							
		Control And Protection Equipment	1	0.0090	2	2.0	2.03	0.000
		Surge Arrester	0					
		Bus	1	0.0090	5	5.0	4.95	0.001
		Disconnect	0					
		Circuit Switcher	0					
		Circuit Transformer (Free Standing)	0					
		Potential Device	0					
		Other	2	0.0180	105	52.5	52.45	0.011
		Unknown	1	0.0090	319	318.8	318.83	0.033
		All Terminal Equipment	5	0.0450	431	86.1	4.95	0.044

Readers should note that when no outages are attributed to a subcomponent or primary cause, the columns for related statistics are left blank.



Frequency of forced outages involving integral subcomponents & terminal equipment of synchronous compensators by voltage classification.



Mean duration of forced outages involving integral subcomponents & terminal equipment of synchronous compensators by voltage classification.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

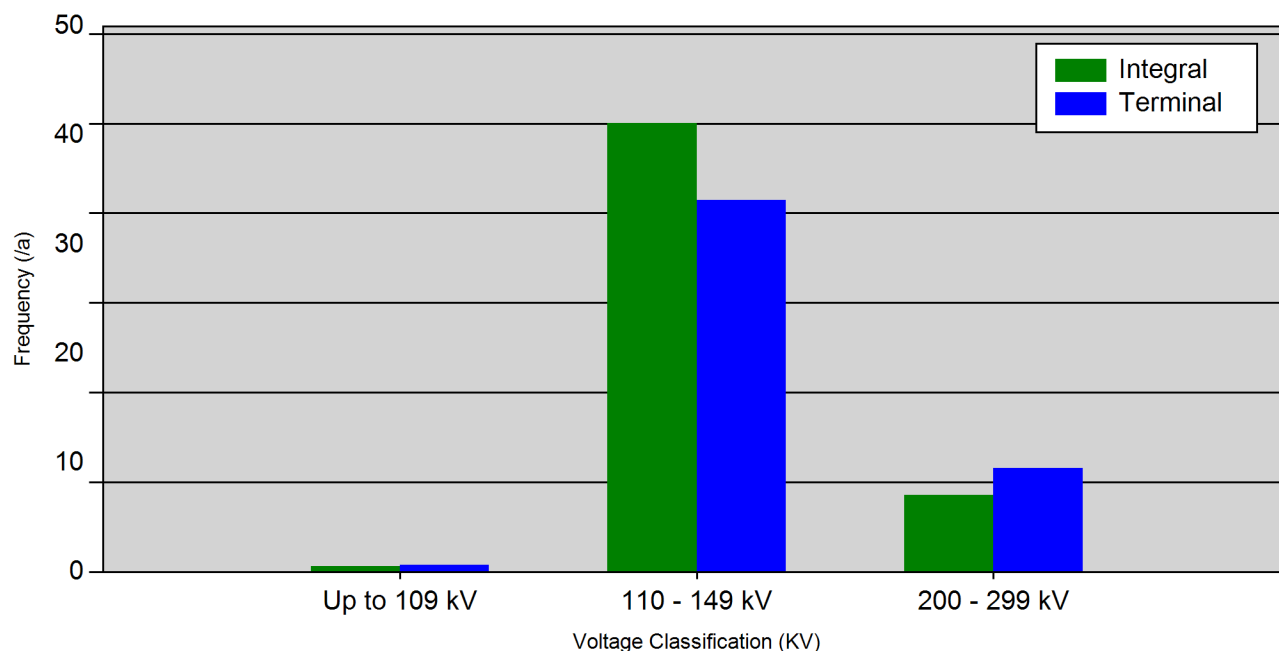
VOLTAGE CLASSIFICATION	COMPONENT T YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Up to 109 kV	150								
		Other	0						0.000
		Bushings Or Terminals	1	0.0067	181	180.6	180.57		0.014
		Stator Elements	3	0.0200	1,530	510.1	602.23		0.116
		Rotor Elements	9	0.0601	30,455	3,383.9	1,328.67		2.322
		Excitation System	7	0.0468	274	39.1	15.18		0.021
		Coupling Transformer	0						0.000
		Cooling Equipment	12	0.0802	317	26.4	4.09		0.024
		Auxiliary Equipment (Starting System)	1	0.0067	8	7.7	7.70		0.001
		All Integral Subcomponents	33	0.2205	32,764	992.9	19.88	992.9	2.499
		Control And Protection Equipment	79	0.5278	8,768	111.0	5.38		0.669
		Low Voltage Equipment	11	0.0735	1,607	146.1	6.62		0.123
		Other	0						0.000
		Unknown	12	0.0802	1,367	114.0	1.52		0.104
		All Terminal Equipment	102	0.6815	11,743	115.1	4.68	115.1	0.896

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT T YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
110 - 149 kV	2								
		Other	0						0.000
		Bushings Or Terminals	0						0.000
		Stator Elements	0						0.000
		Rotor Elements	0						0.000
		Excitation System	0						0.000
		Coupling Transformer	0						0.000
		Cooling Equipment	0						0.000
		Auxiliary Equipment (Starting System)	0						0.000
		All Integral Subcomponents	0			0.0		0.0	0.000
		Control And Protection Equipment	1	0.5014	152	152.3	152.33		0.872
		Low Voltage Equipment	1	0.5014	3	3.0	2.98		0.017
		Other	1	0.5014	26	25.6	25.58		0.146
		Unknown	18	9.0248	1,610	89.5	72.57		9.216
		All Terminal Equipment	21	10.5290	1,791	85.3	72.03	85.3	10.252

Readers should note that when no outages are attributed to a subcomponent or primary cause, the columns for related statistics are left blank.



Frequency of forced outages involving integral subcomponents & terminal equipment of static compensators by voltage classification.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Up to 109 kV	41								
		Other	0						0.000
		Shunt Reactors	1	0.0244	687	687.4	687.42		0.191
		Shunt Capacitors	0						0.000
		Valves (Including Controls)	3	0.0732	49	16.4	16.97		0.014
		Filters	1	0.0244	574	573.6	573.60		0.160
		Coupling Transformer	0						0.000
		Cooling Equipment	12	0.2927	3,564	297.0	23.98		0.992
		Auxiliary Equipment	5	0.1220	611	122.2	23.83		0.170
		All Integral Subcomponents	22	0.5367	5,485	249.3	26.18	249.3	1.528
		Control and Protection Equipment	18	0.4391	325	18.1	2.64		0.091
		Low-Voltage Equipment	4	0.0976	24	6.1	3.54		0.007

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT T YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Other	2	0.0488	1,759	879.3	879.28		0.490
		Unknown	2	0.0488	21	10.5	10.45		0.006
		All Terminal Equipment	26	0.6343	2,129	81.9	4.13	81.9	0.593

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
110 - 149 kV	1								
		Other	1	1.0027	22	22.0	22.03		0.252
		Shunt Reactors	0						0.000
		Shunt Capacitors	0						0.000
		Valves (Including Controls)	2	2.0054	8	4.0	4.04		0.093
		Filters	0						0.000
		Coupling Transformer	0						0.000
		Cooling Equipment	38	38.1029	1,173	30.9	3.61		13.424
		Auxiliary Equipment	0						0.000
		All Integral Subcomponents	41	41.1110	1,203	29.3	3.93	29.3	13.769
		Control and Protection Equipment	19	19.0514	6,407	337.2	4.92		73.336
		Low-Voltage Equipment	1	1.0027	1	1.3	1.25		0.014
		Other	0						0.000
		Unknown	14	14.0379	162	11.5	7.67		1.849
		All Terminal Equipment	34	34.0920	6,570	193.2	6.76	193.2	75.200

For Data Submitted by: All Canada

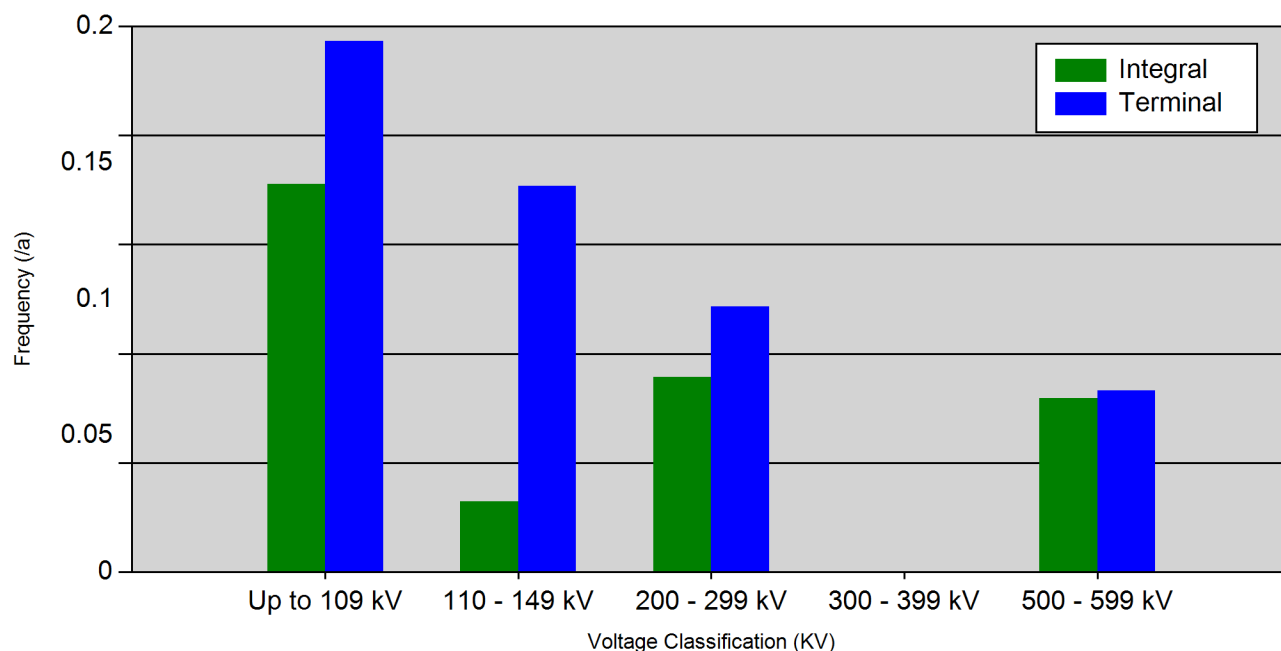
For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
200 - 299 kV	2								
		Other	0						0.000
		Shunt Reactors	0						0.000
		Shunt Capacitors	0						0.000
		Valves (Including Controls)	0						0.000
		Filters	0						0.000
		Coupling Transformer	0						0.000
		Cooling Equipment	14	7.0190	3,696	264.0	49.49		21.154
		Auxiliary Equipment	0						0.000
		All Integral Subcomponents	14	7.0190	3,696	264.0	49.49	264.0	21.154
		Control and Protection Equipment	7	3.5095	1,338	191.1	8.93		7.657
		Low-Voltage Equipment	0						0.000
		Other	0						0.000
		Unknown	12	6.0162	500	41.7	10.88		2.864
		All Terminal Equipment	19	9.5257	1,838	96.7	9.08	96.7	10.520

The title of the shunt reactor bank performance statistics listing is:

TA-RP70: Shunt Reactor Bank Analysis by Voltage Classification and Subcomponent

Readers should note that when no outages are attributed to a subcomponent or primary cause, the columns for related statistics are left blank.



Frequency of forced outages involving integral subcomponents & terminal equipment of shunt reactor banks by voltage classification.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAILABILITY
Up to 109 kV	211								
		Other	1	0.0047	103	102.8	102.83		0.006
		Bushings	12	0.0569	24,063	2,005.2	724.87		1.302
		Internal Elements	15	0.0712	6,834	455.6	362.72		0.370
		Cooling Equipment	0						0.000
		Auxiliary Equipment	2	0.0095	472	236.1	236.11		0.026
		All Integral Subcomponents	30	0.1423	31,471	1,049.0	405.36	1,049.0	1.704
		Control And Protection Equipment	19	0.0902	3,824	201.2	1.32		0.207
		Surge Arrester	0						0.000

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT T YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Bus	4	0.0190	580	145.1	287.28		0.031
		Disconnect	1	0.0047	310	309.7	309.70		0.017
		Circuit Switcher	2	0.0095	1,296	647.8	647.80		0.070
		Current Transformer (Free Standing)	2	0.0095	969	484.4	484.35		0.053
		Low-Voltage Equipment	0						0.000
		Other	9	0.0427	34,890	3,876.7	2,122.83		1.890
		Potential Device	0						0.000
		Unknown	4	0.0190	137	34.2	3.85		0.007
		All Terminal Equipment	41	0.1946	42,004	1,024.5	125.12	1,024.5	2.276

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
110 - 149 kV	78								
		Other	0						0.000
		Bushings	1	0.0129	323	322.6	322.62		0.048
		Internal Elements	0						0.000
		Cooling Equipment	1	0.0129	404	403.9	403.87		0.059
		Auxiliary Equipment	0						0.000
		All Integral Subcomponents	2	0.0258	726	363.2	363.24	363.2	0.107
		Control And Protection Equipment	4	0.0515	1,451	362.7	480.37		0.213
		Surge Arrester	0						0.000
		Bus	0						0.000
		Disconnect	4	0.0515	335	83.7	78.18		0.049
		Circuit Switcher	0						0.000
		Current Transformer (Free Standing)	0						0.000
		Low-Voltage Equipment	0						0.000
		Other	0						0.000
		Potential Device	0						0.000
		Unknown	3	0.0386	4	1.5	1.48		0.001
		All Terminal Equipment	11	0.1416	1,790	162.7	78.18	162.7	0.263

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

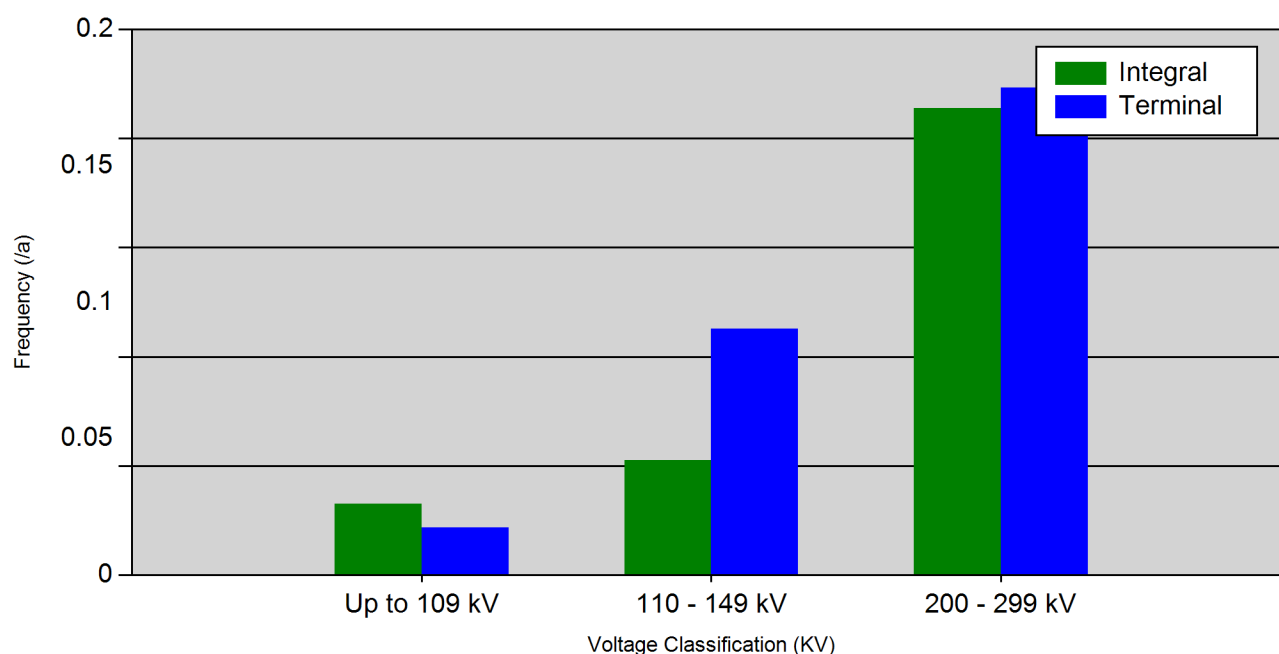
VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
200 - 299 kV	154								
		Other	1	0.0065	0	0.0	0.03		0.000
		Bushings	0						0.000
		Internal Elements	4	0.0260	5,081	1,270.3	708.59		0.377
		Cooling Equipment	1	0.0065	5	5.3	5.25		0.000
		Auxiliary Equipment	5	0.0325	3,561	712.1	3.43		0.264
		All Integral Subcomponents	11	0.0715	8,647	786.1	17.83	786.1	0.642
		Control And Protection Equipment	11	0.0714	847	77.0	14.55		0.063
		Surge Arrester	0						0.000
		Bus	0						0.000
		Disconnect	0						0.000
		Circuit Switcher	1	0.0065	68	68.0	68.02		0.005
		Current Transformer (Free Standing)	0						0.000
		Low-Voltage Equipment	0						0.000
		Other	3	0.0195	582	193.9	6.98		0.043
		Potential Device	0						0.000
		Unknown	0						0.000
		All Terminal Equipment	15	0.0974	1,497	99.8	14.55	99.8	0.111

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
500 - 599 kV	377								
		Other	5	0.0133	3,668	733.6	168.12		0.111
		Bushings	1	0.0027	821	820.9	820.87		0.025
		Internal Elements	2	0.0053	109	54.3	54.27		0.003
		Cooling Equipment	10	0.0265	550	55.0	33.78		0.017
		Auxiliary Equipment	6	0.0159	1,645	274.2	17.71		0.050
		All Integral Subcomponents	24	0.0637	6,793	283.0	35.25	283.0	0.206
		Control And Protection Equipment	11	0.0292	2,321	211.0	18.45		0.070
		Surge Arrester	0						0.000
		Bus	0						0.000
		Disconnect	3	0.0080	862	287.3	23.20		0.026
		Circuit Switcher	5	0.0133	2,196	439.2	123.40		0.067
		Current Transformer (Free Standing)	1	0.0027	10	9.7	9.73		0.000
		Low-Voltage Equipment	0						0.000
		Other	1	0.0027	101	101.1	101.10		0.003
		Potential Device	0						0.000
		Unknown	4	0.0106	29	7.4	5.17		0.001
		All Terminal Equipment	25	0.0665	5,519	220.8	18.45	220.8	0.168

Readers should note that when no outages are attributed to a subcomponent or primary cause, the columns for related statistics are left blank.



Frequency of forced outages involving integral subcomponents & terminal equipment of shunt capacitor banks by voltage classification.

For Data Submitted by: All Canada

For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
Up to 109 kV	230								
		Other	0						0.000
		Bushings Or Terminals	0						0.000
		Capacitors	4	0.0174	1,884	471.0	581.14		0.094
		Insulation System	1	0.0043	56	55.5	55.53		0.003
		Auxiliary Equipment	1	0.0043	91	90.8	90.75		0.004
		All Integral Subcomponents	6	0.0260	2,030	338.4	335.94	338.4	0.100
		Control And Protection Equipment	3	0.0130	2	0.5	0.12		0.000
		Surge Arrester	1	0.0043	3,721	3,721.2	3,721.17		0.183
		Bus	0						0.000
		Disconnect	0						0.000
		Circuit Switcher	0						0.000

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For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Current Transformer (Free Standing)	0						0.000
		Potential Devices	0						0.000
		Low-Voltage Equipment	0						0.000
		Other	0						0.000
		Unknown	0						0.000
		All Terminal Equipment	4	0.0173	3,723	930.7	0.71	930.7	0.184

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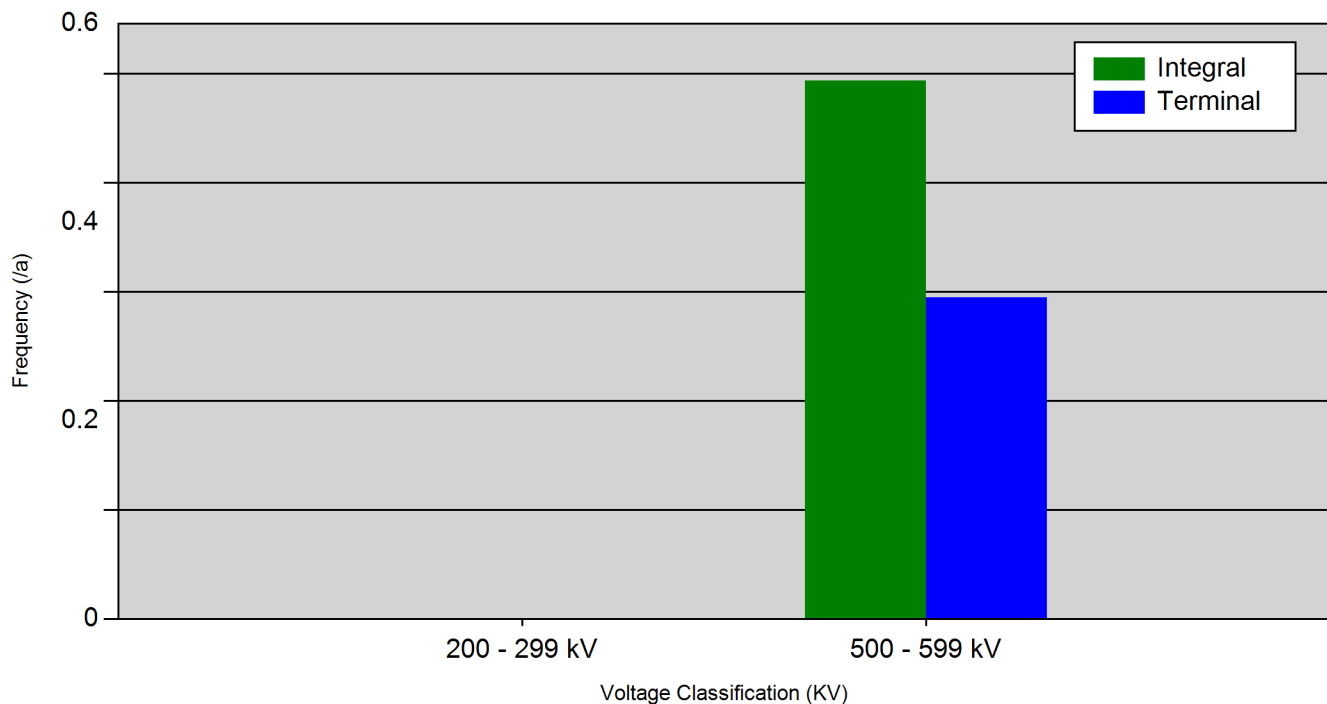
VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
110 - 149 kV	310								
		Other	0						0.000
		Bushings Or Terminals	1	0.0032	4,064	4,064.3	4,064.33		0.148
		Capacitors	8	0.0258	4,236	529.5	51.23		0.156
		Insulation System	2	0.0065	7,819	3,909.5	3,909.53		0.290
		Auxiliary Equipment	2	0.0065	171	85.5	85.53		0.006
		All Integral Subcomponents	13	0.0420	16,291	1,253.1	86.15	1,253.1	0.601
		Control And Protection Equipment	15	0.0484	8,608	573.8	186.55		0.317
		Surge Arrester	0						0.000
		Bus	1	0.0032	43	42.8	42.78		0.002
		Disconnect	1	0.0032	12	12.1	12.12		0.000
		Circuit Switcher	2	0.0065	4	2.0	1.98		0.000
		Current Transformer (Free Standing)	0						0.000
		Potential Devices	1	0.0032	7,382	7,381.5	7,381.50		0.270
		Low-Voltage Equipment	0						0.000
		Other	0						0.000
		Unknown	8	0.0258	5,538	692.2	104.01		0.204
		All Terminal Equipment	28	0.0903	21,585	770.9	98.75	770.9	0.795

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For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
200 - 299 kV	269								
		Other	7	0.0261	2,502	357.4	24.77		0.106
		Bushings Or Terminals	2	0.0074	27	13.7	13.73		0.001
		Capacitors	19	0.0707	33,110	1,742.6	622.23		1.406
		Insulation System	6	0.0223	671	111.8	8.23		0.028
		Auxiliary Equipment	12	0.0447	1,917	159.8	24.77		0.082
		All Integral Subcomponents	46	0.1712	38,228	831.0	71.95	831.0	1.624
		Control And Protection Equipment	34	0.1266	32,932	968.6	129.28		1.400
		Surge Arrester	0						0.000
		Bus	2	0.0074	3,329	1,664.7	1,664.65		0.141
		Disconnect	0						0.000
		Circuit Switcher	0						0.000
		Current Transformer (Free Standing)	0						0.000
		Potential Devices	0						0.000
		Low-Voltage Equipment	0						0.000
		Other	1	0.0037	473	472.7	472.68		0.020
		Unknown	11	0.0410	8,440	767.3	382.15		0.359
		All Terminal Equipment	48	0.1787	45,174	941.1	199.66	941.1	1.920

Readers should note that when no outages are attributed to a subcomponent or primary cause, the columns for related statistics are left blank.



Frequency of forced outages involving integral subcomponents & terminal equipment of series capacitor banks by voltage classification.

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For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
500 - 599 kV	105								
		Other	3	0.0286	4,166	1,388.6	326.17		0.453
		Bushings	0						0.000
		Capacitors	7	0.0667	1,530	218.6	134.32		0.166
		Platform Power Source	1	0.0095	328	328.3	328.32		0.036
		Insulation System (Support Insulators)	5	0.0476	3,331	666.2	409.45		0.362
		By-Pass Device	15	0.1429	2,132	142.1	74.22		0.232
		Re-Insertion Device	1	0.0095	68	68.2	68.20		0.007
		Auxiliary Equipment	25	0.2381	9,051	362.1	52.50		0.984
		All Integral Subcomponents	57	0.5429	20,606	361.5	74.22	361.5	2.240
		Control And Protection Equipment	18	0.1714	21,897	1,216.5	26.64		2.380
		Surge Arrester	0						0.000
		Bus	0						0.000

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For the Period: 21-01 To 25-12

VOLTAGE CLASSIFICATION	COMPONENT YEARS (a)	SUBCOMPONENT	NUMBER OF OUTAGES	FREQUENCY (PER a)	TOTAL TIME (h)	MEAN DURATION (h)	MEDIAN DURATION (h)	MEAN OP.POS. (h)	UNAVAIL ABILITY
		Disconnect	3	0.0286	1,059	353.0	2.38		0.115
		Circuit Switcher	4	0.0381	925	231.2	86.78		0.101
		Current Transformer (Free Standing)	2	0.0190	164	81.9	81.88		0.018
		Potential Devices	0						0.000
		Other	2	0.0190	7	3.3	3.33		0.001
		Unknown	5	0.0476	1,912	382.4	168.70		0.208
		All Terminal Equipment	34	0.3237	25,963	763.6	41.32	763.6	2.822



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