

1 Q. For the budget item identified below, provide the following information:

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<i>Budget Item</i>	<i>Amount</i>	<i>Description</i>
B-26	\$496,000	Upgrade TL227 (69kV Berry Hill – Daniels Harbour)

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4 (a) Further to the Table 4.1 of the Northern Peninsula Upgrading report
 5 provided in PUB-18.0, provide the date, time, duration and cause of
 6 each transient and sustained outage.

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8 (b) What improvement in these statistics does Hydro expect subsequent
 9 to completion of the project?

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11 A. (a) The following tables provide line outage data for TL 227 for both
 12 sustained and transient forced outages as recorded in both of Hydro's
 13 equipment outage databases. The Transmission Equipment Forced
 14 Outage (TEFO) database records forced outage information in a
 15 manner consistent with the reporting standards of the Canadian
 16 Electricity Association (CEA), which accommodates the requirements
 17 of all reporting utilities in Canada. The System Performance and
 18 Protection (SP&P) database is an internally developed and maintained
 19 database. SP&P information is gathered in a manner so as to provide
 20 details specific to Hydro's equipment, with particular emphasis upon
 21 protection and control equipment performance. When comparing the
 22 information obtained from the two databases, it is important to be
 23 aware of the differences between the purpose and reporting
 24 requirements associated with each.

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1 Sustained outage data (Table 1) from the TEFO database is provided
 2 for the period 1992 - 1999 inclusive, while transient outage data is
 3 provided for the period 1996-1999 inclusive. Note that sustained
 4 outage data for 66/69 kV class equipment was not collected in a
 5 manner consistent with the reporting standards of the Canadian
 6 Electricity Association (CEA) until early in 1992. Likewise, momentary
 7 outage data for 66/69 kV class equipment was not collected until
 8 1997. Information from the SP&P database is provided for the period
 9 1990-1999. Note that information from the SP&P database (Table 2)
 10 was used as the basis for Table 4.1 of the Northern Peninsula
 11 Upgrading Report.

TABLE 1

TEFO Database Entries			
Date and Time	Duration (Minutes)	Cause	Sustained/Momentary
1992	5 h 36 m	Adverse Weather	S
1992	0 h 5 m	Adverse Weather	S
1992	0 h 3 m	Adverse Weather	S
1992	0 h 2 m	Adverse Weather	S
1992	34 h 56 m	Adverse Weather	S
9/24/93 12:50	0 h 38 m	Adverse Weather	S
11/29/93 13:15	5 h 5 m	Defective Equipment	S
7/27/94 16:37	0 h 43 m	Adverse Weather	S
8/18/94 7:30	3 h 17 m	Adverse Weather	S
9/25/94 9:16	1 h 28 m	Adverse Environment	S
11/7/94 10:20	6 h 45 m	Defective Equipment	S
2/6/95 2:25	8 h 52 m	Defective Equipment	S
3/9/95 19:14	118 h 0 m	Adverse Weather	S
12/10/95 19:47	3 h 50 m	Adverse Weather	S
2/10/96 5:38	2 h 35 m	Adverse Weather	S
3/22/96 21:21	0 h 49 m	Adverse Environment	S
8/10/96 0:58	3 h 1 m	Adverse Weather	S
8/30/96 2:10	0 h 7 m	Adverse Weather	S
12/22/96 9:34	0 h 2 m	Adverse Weather	S
12/22/96 9:40	5 h 26 m	Adverse Environment	S
12/22/96 21:22	0 h 2 m	Adverse Weather	S

TEFO Database Entries			
Date and Time	Duration (Minutes)	Cause	Sustained/Momentary
12/22/96 21:55	0 h 1 m	Adverse Weather	S
12/22/96 23:56	1 h 18 m	Adverse Weather	S
12/22/96 23:57	0 h 1 m	Adverse Weather	S
12/23/96 0:03	0 h 4 m	Adverse Weather	S
12/23/96 0:39	0 h 2 m	Adverse Weather	S
12/23/96 0:46	0 h 3 m	Adverse Weather	S
12/23/96 1:25	0 h 57 m	Adverse Weather	S
12/23/96 7:29	0 h 43 m	Adverse Weather	S
12/31/96 8:29	0 h 2 m	Adverse Weather	S
12/31/96 8:32	0 h 2 m	Adverse Weather	S
12/31/96 14:22	0 h 1 m	Adverse Weather	S
12/31/96 16:53	0 h 1 m	Adverse Weather	S
12/31/96 21:17	0 h 1 m	Adverse Weather	S
12/31/96 21:52	0 h 1 m	Adverse Weather	S
12/31/96 21:53	0 h 44 m	Adverse Weather	S
1/3/97 23:20	0 h 0 m	Adverse Environment	M
1/5/97 0:47	0 h 0 m	Adverse Environment	M
1/6/97 19:26	0 h 0 m	Adverse Environment	M
1/6/97 22:17	0 h 2 m	Adverse Environment	S
10/1/97 3:10	0 h 0 m	Adverse Weather	M
7/23/98 0:28	0 h 0 m	Adverse Weather	M
12/14/98 10:56	0 h 0 m	Adverse Weather	M
12/30/98 17:03	0 h 0 m	Adverse Weather	M
12/30/98 17:22	0 h 0 m	Adverse Weather	M
12/30/98 17:27	0 h 0 m	Adverse Weather	M
12/30/98 18:27	0 h 0 m	Adverse Weather	M
12/30/98 18:33	0 h 0 m	Adverse Weather	M
12/30/98 18:36	0 h 0 m	Adverse Weather	M
12/30/98 19:03	0 h 0 m	Adverse Weather	M
12/30/98 19:08	0 h 0 m	Adverse Weather	M
1/4/99 17:37	0 h 0 m	Adverse Weather	M
3/16/99 15:07	0 h 0 m	Unknown	M
7/23/99 18:42	0 h 0 m	Adverse Weather	M
10/17/99 5:43	0 h 0 m	Adverse Weather	M
10/17/99 5:51	0 h 0 m	Adverse Weather	M
10/17/99 5:52	0 h 0 m	Adverse Weather	M
10/17/99 5:54	0 h 0 m	Adverse Weather	M
10/17/99 5:59	0 h 0 m	Adverse Weather	M
10/17/99 6:00	0 h 0 m	Adverse Weather	M
10/17/99 6:02	0 h 0 m	Adverse Weather	M
10/17/99 6:05	0 h 0 m	Adverse Weather	M
10/17/99 6:06	0 h 0 m	Adverse Weather	M

TEFO Database Entries			
Date and Time	Duration (Minutes)	Cause	Sustained/Momentary
10/17/99 6:07	0 h 0 m	Adverse Weather	M
10/17/99 6:08	0 h 0 m	Adverse Weather	M
10/17/99 6:09	0 h 0 m	Adverse Weather	M
10/17/99 6:10	0 h 0 m	Adverse Weather	M
10/17/99 6:11	0 h 0 m	Adverse Weather	M
10/17/99 6:12	1 h 36 m	Adverse Weather	S
10/17/99 7:05	0 h 0 m	Adverse Weather	M
10/17/99 7:07	0 h 0 m	Adverse Weather	M
10/17/99 7:17	0 h 0 m	Adverse Weather	M
10/17/99 7:18	0 h 0 m	Adverse Weather	M
10/17/99 7:52	0 h 0 m	Adverse Weather	M
10/17/99 7:56	0 h 0 m	Adverse Weather	M
10/17/99 7:59	0 h 0 m	Adverse Weather	M
10/17/99 8:09	0 h 0 m	Adverse Weather	M
10/17/99 8:10	0 h 4 m	Adverse Weather	S
10/17/99 8:14	0 h 0 m	Adverse Weather	M
10/17/99 8:15	0 h 0 m	Adverse Weather	M
10/17/99 8:16	0 h 0 m	Adverse Weather	M
10/17/99 8:19	0 h 0 m	Adverse Weather	M
10/17/99 8:20	0 h 0 m	Adverse Weather	M
10/17/99 8:21	0 h 0 m	Adverse Weather	M
10/17/99 8:22	0 h 0 m	Adverse Weather	M
10/17/99 8:23	0 h 0 m	Adverse Weather	M
10/17/99 8:24	0 h 0 m	Adverse Weather	M
10/17/99 8:26	0 h 0 m	Adverse Weather	M
10/17/99 8:27	0 h 0 m	Adverse Weather	M
10/17/99 8:28	0 h 0 m	Adverse Weather	M
10/17/99 8:29	0 h 0 m	Adverse Weather	M
10/17/99 8:30	0 h 0 m	Adverse Weather	M
10/17/99 8:31	0 h 0 m	Adverse Weather	M
10/17/99 8:32	0 h 0 m	Adverse Weather	M
10/17/99 8:33	0 h 0 m	Adverse Weather	M
10/17/99 8:34	0 h 0 m	Adverse Weather	M
10/17/99 8:35	0 h 0 m	Adverse Weather	M
10/17/99 8:40	0 h 0 m	Adverse Weather	M
10/17/99 8:41	0 h 0 m	Adverse Weather	M
10/17/99 8:45	0 h 0 m	Adverse Weather	M
10/17/99 8:46	0 h 0 m	Adverse Weather	M
10/17/99 8:47	0 h 0 m	Adverse Weather	M
10/17/99 8:49	0 h 0 m	Adverse Weather	M
10/17/99 8:50	0 h 0 m	Adverse Weather	M
10/17/99 8:51	0 h 0 m	Adverse Weather	M

TEFO Database Entries			
Date and Time	Duration (Minutes)	Cause	Sustained/Momentary
10/17/99 8:52	7 h 5 m	Adverse Weather	S
10/17/99 9:09	0 h 0 m	Adverse Weather	M
10/24/99 2:54	0 h 0 m	Adverse Weather	M
6/22/00 9:17	1 h 33 m	Defective Equipment	S
7/18/00 15:44	0 h 0 m	Adverse Weather	M
9/27/00 14:02	0 h 34 m	Defective Equipment	S

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TABLE 2

SP&P Database Entries			
DATE	TIME	Cause	Reclosing
10-Jul-90	2100	Lightning	no
7-Sep-90	2355	Unknown	no
6-Dec-90	0438	Salt Contamination	no
5-Mar-91	1337	Defective Equipment	no
6-Aug-91	1303	Salt Contamination	no
20-Aug-91	2105	Salt Contamination	yes
20-Aug-91	2140	Salt Contamination	yes
20-Aug-91	2152	Salt Contamination	yes
20-Aug-91	2203	Salt Contamination	yes
20-Aug-91	2207	Salt Contamination	yes
20-Aug-91	2217	Salt Contamination	yes
20-Nov-91	0600	Unknown	yes
3-Dec-91	0900	Defective Equipment	No
15-Jan-92	1044	Defective Equipment	No
14-Apr-92	0502	High Winds	yes
14-Apr-92	0507	High Winds	yes
14-Apr-92	0511	High Winds	yes
14-Apr-92	0522	High Winds	yes
19-Aug-92	0035	Defective Equipment	No
19-Aug-92	0426	Defective Equipment	No
19-Aug-92	0430	Defective Equipment	yes
19-Aug-92	0436	Defective Equipment	yes
19-Aug-92	0436	Defective Equipment	No
19-Aug-92	0438	Defective Equipment	yes
19-Aug-92	0440	Defective Equipment	No
19-Aug-92	0440	Defective Equipment	No
19-Aug-92	0615	Defective Equipment	No
29-Jul-93	2131	Lightning	yes
24-Sep-93	1250	Salt Contamination	No

SP&P Database Entries			
DATE	TIME	Cause	Reclosing
22-Mar-96	1844	Salt Contamination	yes
22-Mar-96	1844	Salt Contamination	yes
22-Mar-96	1844	Salt Contamination	yes
22-Mar-96	1844	Salt Contamination	yes
22-Mar-96	1844	Salt Contamination	yes
10-Aug-96	0058	Lightning	No
30-Aug-96	0210	Unknown	No
9-Dec-96	1945	High Winds	yes
9-Dec-96	2041	High Winds	yes
9-Dec-96	2124	High Winds	yes
9-Dec-96	2124	High Winds	yes
9-Dec-96	2124	High Winds	yes
9-Dec-96	2124	High Winds	yes
9-Dec-96	2124	High Winds	yes
9-Dec-96	2124	High Winds	yes
9-Dec-96	2124	High Winds	yes
9-Dec-96	2124	High Winds	yes
20-Dec-96	2338	Salt Contamination	yes
21-Dec-96	0023	Salt Contamination	yes
22-Dec-96	0901	Salt Contamination	yes
22-Dec-96	0926	Salt Contamination	yes
22-Dec-96	0934	Salt Contamination	No
22-Dec-96	0940	Salt Contamination	No
22-Dec-96	2122	Salt Contamination	No
22-Dec-96	2155	Salt Contamination	No
22-Dec-96	2332	Salt Contamination	yes
22-Dec-96	2332	Salt Contamination	yes
22-Dec-96	2356	Salt Contamination	No
23-Dec-96	0003	Salt Contamination	No
23-Dec-96	0003	Salt Contamination	No
23-Dec-96	0003	Salt Contamination	No
23-Dec-96	0125	Salt Contamination	No
23-Dec-96	0518	Salt Contamination	No
23-Dec-96	0518	Salt Contamination	No
23-Dec-96	0518	Salt Contamination	No
23-Dec-96	0729	Salt Contamination	No
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	No
31-Dec-96	0829	Salt Contamination	No
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	yes

SP&P Database Entries			
DATE	TIME	Cause	Reclosing
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	No
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	0829	Salt Contamination	No
31-Dec-96	0829	Salt Contamination	No
31-Dec-96	0829	Salt Contamination	yes
31-Dec-96	2055	Salt Contamination	yes
31-Dec-96	2055	Salt Contamination	yes
31-Dec-96	2055	Salt Contamination	yes
31-Dec-96	2117	Salt Contamination	No
31-Dec-96	2117	Salt Contamination	No
31-Dec-96	2117	Salt Contamination	No
3-Jan-97	2320	Salt Contamination	yes
4-Jan-97	1021	Salt Contamination	No
5-Jan-97	0047	Salt Contamination	yes
6-Jan-97	0413	Salt Contamination	No
6-Jan-97	1509	Salt Contamination	No
6-Jan-97	1720	Salt Contamination	No
6-Jan-97	1746	Salt Contamination	No
6-Jan-97	1748	Salt Contamination	No
6-Jan-97	1837	Salt Contamination	No
6-Jan-97	1926	Salt Contamination	No
6-Jan-97	2217	Salt Contamination	No
29-Jan-97	2001	Salt Contamination	No
29-Jan-97	2017	Defective Equipment	No
1-Oct-97	0310	Lightning	yes
23-Jul-98	0028	Lightning	yes
14-Dec-98	1056	Salt Contamination	yes
30-Dec-98	1703	High Winds	yes
30-Dec-98	1703	High Winds	yes
30-Dec-98	1703	High Winds	yes
30-Dec-98	1827	High Winds	yes
30-Dec-98	1827	High Winds	yes
30-Dec-98	1827	High Winds	yes
30-Dec-98	1903	High Winds	yes
30-Dec-98	1903	High Winds	yes
4-Jan-99	1737	High Winds	yes
16-Mar-99	1507	Unknown	yes

SP&P Database Entries			
DATE	TIME	Cause	Reclosing
17-Oct-99	0752	Salt Contamination	yes
17-Oct-99	0752	Salt Contamination	yes
17-Oct-99	0752	Salt Contamination	yes
17-Oct-99	0752	Salt Contamination	yes
24-Oct-99	0747	High Winds	No
24-Oct-99	0254	High Winds	yes

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Note: Events showing the same date and time indicates that a number of recloses took place, starting at the time indicated.

(b) Upgrading this line will reduce outages resulting from salt contamination.