

1 Q. Further to the response to PUB-NLH-004, provide details of the amount of
2 generation lost and the number of customers affected by the under frequency trips
3 listed in the response.

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6 A. The table in PUB-NLH-053, Attachment 1 provides details of the amount of
7 generation lost and the number of customers affected by the under frequency trips
8 listed in Hydro's response to PUB-NLH-004.

Year	Event	Date/Time	Generation Loss (MW)	Number of Customers Affected				Initiating Event
				Total	NF Power	Industrial	Hydro	
2004	1	Feb 20, 2004 09:15 AM	115	11,030	8,849	2	2,179	Holyrood Unit 2 - Exciter Problem
	2	Mar 07, 2004 10:03 PM	143	13,181	11,000	2	2,179	Holyrood Unit 2 - Loss of Station Service
	3	Apr 13, 2004 08:37 PM	125	13,996	11,814	3	2,179	Holyrood Unit 3 - Fuel System
	4	Aug 15, 2004 02:42 AM	45	1	0	1	0	Cat Arm Unit 2 - Fire System Failure
	5	Sep 21, 2004 01:43 PM	141	17,920	13,411	3	4,506	Bay d'Espoir Unit 7 - Exciter testing
	6	Oct 07, 2004 12:30 PM	100	12,646	8,138	2	4,506	Holyrood Unit 1 - DCS Testing
	7	Dec 21, 2004 03:53 PM	81	24,218	23,006	2	1,210	Holyrood Unit 1 - Inadvertent Trip
2005	1	Mar 22, 2005 12:54 PM	61	3,527	2,306	1	1,220	Hinds Lake Unit - Trip during testing
	2	May 09, 2005 06:26 PM	N/A	31,243	29,180	3	2,060	Problem with governor on Bay d'Espoir Unit 6 caused a significant drop in system frequency
	3	Jul 20, 2005 03:16 PM	80	2	0	2	0	Cat Arm Units 1 and 2 - Lightning Strike to TL247
	4	Sep 02, 2005 12:00 PM	N/A	71,011	64,566	3	6,442	A significant frequency disturbance resulted after all on-line units responded to a frequency oscillation.
	5	Sep 10, 2005 10:51 AM	80	10,205	8,698	3	1,504	Holyrood Unit 3 - Station Service Issues
2006	1	Jan 06, 2006 09:32 AM	110	10,818	8,763	2	2,053	Holyrood Unit 2 - Boiler Tube Leak
	2	Apr 12, 2006 01:11 PM	70	7,254	6,035	1	1,218	Holyrood Unit 3 - Inadvertent Trip
	3	May 15, 2006 11:44 AM	55	7,253	6,034	1	1,218	Cat Arm Unit 1 - Fire System Failure
	4	May 17, 2006 09:20 AM	67	7,253	6,034	1	1,218	Bay d'Espoir Unit 1 - High Bearing Temp
	5	Dec 15, 2006 12:55 AM	50	6,319	5,482	1	836	Holyrood Unit 3 - Fuel Oil Controls
	6	Dec 20, 2006 06:57 PM	62	2,258	2,257	1	0	Bay d'Espoir Unit 1 - Spherical Calve Closed
2007	1	Feb 10, 2007 01:46 PM	120	24,047	21,987	1	2,059	Cat Arm Units 1 and 2 - TL247 Trip (Icing)
	2	Mar 23, 2007 09:53 AM	75	7,169	6,328	2	839	Upper Salmon Unit - Fault at Intake
	3	Jun 19, 2007 01:28 PM	50	6,007	5,167	2	838	Holyrood Unit 1 - Loss of Station Service
	4	Oct 12, 2007 12:28 PM	77	8,208	7,369	1	838	Holyrood Unit 3 - Fuel Oil Controls
	5	Nov 25, 2007 12:08 PM	133	29,139	27,592	2	1,545	Holyrood Unit 1 - Boiler Trip
	6	Dec 28, 2007 02:21 PM	120	13,592	12,046	1	1,545	Holyrood Unit 1 - Lube Oil Pump Failure
2008	1	Jan 01, 2008 12:28 AM	70	8,465	7,504	1	960	Holyrood Unit 3 - Phase wire down on unit transformer
	2	Feb 14, 2008 04:26 PM	145	19,014	16,941	2	2,071	Holyrood Unit 3 - Station Service Issues
	3	Feb 20, 2008 03:57 AM	69	8,266	7,304	2	960	Bay d'Espoir Unit 3 - Stator Ground Fault
	4	Jul 03, 2008 12:31 PM	62	5,250	4,287	1	962	Cat Arm Units 1 and 2 - Lightning Strike to TL247
	5	Jul 29, 2008 10:26 PM	120	49,787	43,775	2	6,010	Cat Arm Units 1 and 2 - Lightning Strike to TL247
	6	Jul 29, 2008 06:09 PM	57	5,136	4,291	1	844	Hinds Lake Unit - High Bearing temp
2009	1	Mar 05, 2009 05:14 PM	90	10,881	9,633	1	1,247	Holyrood Unit 1 - High Drum Level
	2	Jul 29, 2009 10:26 AM	N/A	11,309	10,061	1	1,247	67 MW of generation was removed from system at Corner Brook Pulp and Paper. An overload occurred on the Deer Lake Power system after TL248 was taken out of service for maintenance, while Deer Lake Power Line 1 was also out of service.
	3	Aug 24, 2009 03:21 AM	N/A	5,425	5,424	1	0	Slow clearing fault on TL202 resulting in a drop in system frequency (tree contact)
	4	Aug 24, 2009 03:33 AM	N/A	18,188	16,941	0	1,247	Another slow clearing fault on TL202 resulting in a drop in system frequency (tree contact)
	5	Nov 06, 2009 07:41 PM	98	16,397	15,149	1	1,247	Holyrood Unit 1 - High Drum Level
	6	Dec 02, 2009 12:33 AM	N/A	15,676	12,537	1	3,138	70 MW of generation was removed from system at Corner Brook Pulp and Paper. Deer Lake Power Lines 1 and 2 tripped and resulted in an overload on transformer T1 at Deer Lake Terminal Station.
	7	Dec 06, 2009 04:27 PM	56	4,879	4,879	0	0	Holyrood Unit 1 - High Drum Level

Year	Event	Date/Time	Generation Loss (MW)	Number of Customers Affected				Initiating Event
				Total	NF Power	Industrial	Hydro	
2010	1	Jul 13, 2010 12:30 PM	N/A	3,560	3,560	0	0	A slow clearing fault on TL233 resulting in the operation of the rate of change under frequency protection.
	2	Jul 18, 2010 07:18 PM	N/A	3,530	3,530	0	0	A slow clearing fault on NP Line 363L resulting in the operation of the rate of change under frequency protection.
	3	Jul 18, 2010 10:54 PM	50	6,488	6,488	0	0	Hinds Lake Unit - Lightning Strike to TL243
	4	Nov 14, 2010 10:33 PM	53	5,057	5,057	0	0	Bay d'Espoir Unit 3 - Inadvertent Trip
	5	Dec 22, 2010 09:19 PM	75	5,273	5,272	1	0	Upper Salmon Unit - Governor trip
	6	Dec 30, 2010 12:57 PM	70	5,273	5,272	1	0	Holyrood Unit 3 - Cooling water flow issues
2011	1	Jan 14, 2011 02:33 PM	70	5,487	5,487	0	0	Holyrood Unit 3 - Trip during testing
	2	May 12, 2011 05:13 PM	73	6,485	6,485	0	0	Holyrood Unit 1 - Low Drum Level
	3	Oct 27, 2011 12:04 AM	66	5,346	5,346	0	0	Upper Salmon Unit - Unit transformer trip
2012	1	Jan 14, 2012 01:15 PM	142	21,141	18,940	1	2,200	Holyrood Units 1 and 2 - Station Service Problems
	2	May 22, 2012 01:12 PM	60	6,046	6,046	0	0	Cat Arm Unit 1 - Fire System Failure
	3	Oct 17, 2012 07:11 PM	71	17,824	16,546	0	1,278	Holyrood Unit 1 -False trip from DCS
	4	Nov 21, 2012 02:38 PM	98	12,872	11,594	0	1,278	Holyrood Unit 2 -Low Drum Level
	5	Nov 25, 2012 11:24 AM	60	6,660	6,660	0	0	Holyrood Unit 2 -Inadvertent Trip
2013	1	Jan 16, 2013 11:35 PM	121	17,498	15,299	0	2,199	Holyrood Unit 3 - False Vacuum Trip Alarm
	2	Jan 18, 2013 09:40 PM	68	4,309	4,309	0	0	Bay d'Espoir Unit 4 - False Protection Signal
	3	Mar 01, 2013 03:06 AM	52	6,256	6,256	0	0	Bay d'Espoir Unit 1 - Exciter Trip
	4	Mar 10, 2013 04:33 PM	69	6,041	6,041	0	0	Holyrood Unit 3 - Fuel Pump failure
	5	Apr 16, 2013 11:35 AM	91	15,711	14,430	0	1,281	Holyrood Unit 2 - Low Bearing oil pressure
	6	Apr 17, 2013 07:00 AM	146	49,164	42,502	0	6,662	Bay d'Espoir Units 3 and 5 - Bus B3 lockout and Breaker failure protection issues
	7	Nov 29, 2013 06:13 PM	119	6,764	6,764	0	0	Holyrood Unit 1 - Inadvertent Trip