Replace Insulators TL231, (230kV Bay d'Espoir-Stoney Brook), p. B-41, $916,000
Replace Insulators, p. B-49, $306,800
Replace Insulators, p. B-72, $1,020,000

Q. Please provide an (*sic*) on the status of the overall program to replace insulators manufactured by the Canadian Ohio Brass Company, including: 1) the number of insulators that have been replaced to date; 2) the cost that has been incurred to December 31, 2004 to carry out this program; 3) the anticipated timetable for the replacement of the remaining COB insulators; 4) the anticipated cost to replace the remaining COB insulators; 5) the areas of the NLH system that continue to require this attention; and 6) the number of COB insulators, set out by area, that will remain in the system as of December 31, 2005.

A. Transmission Lines:

The table below provides a summary of the transmission line insulator replacements completed or being planned.

The number of insulators replaced on transmission lines to the end of 2004 was 59,420, at a total cost of $2,186,936.00. Hydro is planning to have all COB insulators on transmission lines replaced by the end of 2008. The anticipated costs for replacements in the period 2005 to 2008 are $4,939,500.

Transmission Line Insulator Replacements – Summary				
Year	**TL Insulators Replacement**	**Cost**	**Line Length (km)**	**No. of Insulators**
2001	TL 231 69 KV Bay d'Espoir to Stoney Brk.	$173,615	105.31	3000
2002	TL 229 69 KV Glenburnie to Wiltondale	$ 82,080	31.5	3983
	TL 226 69 KV Deer Lake to Berry Hill	$120,746	77.52	10700
	TL 211 230 KV Massey to Bottom Brook	$269,188	55.68	7524
2003	TL 209 230 KV Stephenville to Bottom Brk.	$236,140	21.06	6522
2004	TL 214 138 KV Bottom Brk. To Doyles	$623,286	118.27	17691
	TL 233 230 KV Buchan's to Bottom Brk.	$681,881	135.85	10000
2005F	TL 243 138 KV Hinds Lake to Howley	$ 69,707	14.97	9018
2006F	TL 231 230 kV Bay d'Espoir to Stony Brk.		105.31	13071
2007F	TL 234 230 KV Upper Salmon to Bay d'Espoir		51.54	12687
	TL 251, 69 kV Howley to Hampton TL 252, 69 KV Hampton Tap to Jackson's Arm		47.61 53.19	4167 3939
2008F	TL 253 69 KV Coney Arm to Jackson's Tap		12.12	2655
	TL 232 230 KV Stony Brk. To Buchans		84.25	16323

Terminal Stations:

The table below provides a summary of the terminal station insulator replacement plans for the next five years. Prior to 2006 there were no formal capital programs for the replacement of COB insulators in terminal stations.

In 2005 an operational review of various terminal stations identified those insulators that need to be replaced. The schedule for these replacements is from 2006 to 2010, at a total anticipated cost of $1,598,000.00. The terminal stations on the system targeted for these replacements and the number of insulators at each station are shown in the table below. The schedule for individual replacements has not been determined yet.

Terminal Station Insulator Replacements - Summary						
Terminal Station	**Number of Insulators**					
	230 kV	**138 kV**	**69 kV**	**66 kV**	**44 kV**	**25 kV**
Bottom Brook	93	32				
Indian River		6				
South Brook		12				
Stoney Brook	82	65				
Sunnyside	92	46				
Western Avalon	58	22		11		
Deer Lake	45	98				
Howley		109				
Springdale		6				
Holyrood		6		14		
Hinds Lake		24				
Massey Drive	36		7	6		
Stephenville	72			58		
Oxen Pond	33			77		
Bay d'Espoir	282					
Bay d'Espoir 2	45			15		
Buchans	34					34
Grand Falls	9					
Long Harbour	8				121	
Come By Chance	14					
Hardwoods	81			12		
Doyles			4	27		
Conne River			2	3		
Barachoix				7		
English Harbour West				19		
Hampden				12		
Jackson's Arm				21		

Distribution Lines:

The table below provides a summary of insulator replacements on distribution systems for the period 2001 to 2005F. The costs shown for 2005F are costs to date.

The actual number of insulators replaced to date is not available because Hydro does not record project information in this detail. There is no schedule for specific replacement of insulators, COB or otherwise on the distribution systems. For distribution systems, insulator replacements are included as part of general system upgrades. These upgrades are identified through review of the performance indicators and field inspections for the particular distribution systems. Therefore, the anticipated costs to replace insulators, COB or otherwise, has not been determined.

Distribution Line Insulator Replacement – Summary					
Year	**Project Description**	**Feeder**	**Cost**	**Length (km)**	**$ per km**
2001	None				
2002	South Brook, Insulator Replacement	L4	$284,233.00	33	$8,613.12
	English Harbour West, Insulator Replacement	L1	$390,540.00	59.5	$6,563.70
2003	Barachoix Distribution Sys. L1, Replace Insulators (146 strs.)	L1	$ 69,758.00	38.6	$1,807.20
	Bottom Waters Dist. Sys. L3, Replace Insulators (368 strs.)	L3	$233,990.00	36.2	$6,463.81
	King's Point Dist. System L1, Replace Insulators	L1	$231,494.00	47.3	$4,894.16
	St Anthony System L1, Replace Insulators and Poles	L1	$290,138.00	39.2	$7,401.48
2004	Bottom Waters Dist. Sys. L1, Replace Insulators	L1	$240,064.00	48	$5,001.33
	Fleur De Lys Dist. Sys. L1 & L2, Replace Insulators	L1 & L2	$237,447.00	30.2	$7,862.48
	South Brook Dist. Sys. L1, Replace Insulators (141 strs.)	L1	$ 75,637.00	33.4	$2,264.58
2005F	Farewell Head L6, Replace Insulators	L6	$ 73,933.00	39	$1,895.72
	Hawke's Bay L3, Replace Insulators	L3	$ 74,901.00	28.6	$2,618.92
	Plum Point L1, Replace Insulators	L1	$ 76,413.00	48.5	$1,575.53