1	Q.	Grant Thornton's 2002 Annual Financial Review of Hydro		
2		Page 40, Reliability Centered Maintenance (RCM) Approach for		
3		Transmission and Rural Operations - Please provide particulars of the RCM		
4		programs to be put in place in 2003 for distribution systems, diesel plants		
5		and terminal stations; the RCM principles for gas turbines and transmission		
6		systems established in 2003; the cost savings and/or productivity		
7		improvements expected in each case; and, specifics as to how these		
8		expected cost savings and/or productivity improvements have been		
9		incorporated into the 2004 test year forecast.		
10				
11				
12	Α.	Transmission and Rural Operations has not completed its analysis of all		
13		systems, however, various changes to its maintenance programs have been		
14		recommended and implemented. These changes will maintain reliability		
15		levels while reducing costs. Examples within the five systems analyzed are		
16		as follows:		
17				
18		Transmission:		
19		 Helicopter patrols reduced from 4 to 2 annually; 		
20		 Annual snowmobile patrol eliminated; 		
21		 For wood pole lines less than 15 years of age, the inspection cycle 		
22		changed from 5 to 10 years; and		
23		For steel and aluminium tower lines, the inspection cycle changed		
24		from 5 to 10 years.		
25				
26		Distribution:		
27		Regular inspections of distribution stations reduced in frequency from		
28		monthly to every 4 months; and		

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 The maintenance tactic for all reclosers was changed. Previously,
maintenance was performed every 50 operations or annually. The
new frequency will be based on the level of fault current interrupted by
the recloser. This will typically reduce the maintenance requirements
to every 200 operations or 3-year timeframe.
Terminal Stations:
• Frequency of general inspections reduced from 2 months to 4 months;
 Preventative maintenance on transformers, breakers, disconnect
switches, current transformers, potential transformers and capacitor
banks to be conducted every 6 years instead of every 3 years;
 Frequency of infrared scans to be reduced from annually to every 2
years; and
 Perform gas analysis of SF6 breakers to determine quality.
Depending on test results, establish a program.
Diesel Plants:
Preventative maintenance inspections of the engine-generator will be
reduced from 6-month intervals to 12-month intervals;
 Inspections on fuel, lubrication, air, cooling and exhaust systems be
completed every 12 months rather than 6 months; and
Major engine overhauls will be completed every 20,000 hours rather
than every 15,000 hours.
Gas Turbines:
Electrical and mechanical preventative maintenance checks on
several systems including compressed air, fuel, lubricating oil, cooling,
battery and exhaust have been reduced from 2 to 6 month intervals.

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1	The response to CA-113 NLH indicated that the Test Year forecast savings		
2	for 2004 as a result of RCM was approximately \$1,000,000. Following is an		
3	estimated breakdown by system.		
4			
5	Transmission	\$335,000	
6	Distribution	\$145,000	
7	Terminal Stations	\$250,000	
8	Diesel Plants	\$250,000	
9	Gas Turbines	\$ 20,000	
10			
11	Please refer to the response to CA-202 NLH as to how these savings have		
12	been incorporated into the 2004 Test Year.		