Q. From Liberty's Interim Report, Hydro had not been meeting long-term breakers objectives of four-year cycles for preventive maintenance on its circuit breakers prior to the January 2014 outages. Please provide the calculations and amounts for preventive breaker maintenance if Hydro had maintained the four-year breaker maintenance schedule for the six years from 2010 through 2015,

A. The long-term circuit breaker PM cycle was based on a six-year cycle prior to 2014. In 2014, Hydro reviewed its cycle and changed it to four years. Table 1 outlines the costs associated with Hydro completing air blast circuit breaker PMs within the given years as was originally planned. Table 1 contains average costs if Hydro in-house crews would have completed them as well as the average costs if a contractor would have been utilized. Both options would have been evaluated at the time based on crew availability and outage schedules.

Table 1

Air Blast Circuit Breakers **Cost Summary Calculation - PMs Not Completed Between 2010-2015**						
Year	**PMs Not completed**	**Average Cost of PM**		**Total Average Cost**		
		In-House	**Contractor**	**In-House**	**Contractor**	
2010	6	$3,600	$9,000	$21,600	$54,000	
2011	7	$3,300	$9,200	$23,100	$64,400	
2012	3	$5,400	$9,400	$16,200	$28,200	
2013	2	$4,400	$9,600	$8,800	$19,200	
2014	0			$0	$0	
2015	0			$0	$0	
		Total Average Costs		$69,700	$165,800	
		Additional Costs		$13,940	$46,800	
				Low	High	**Average**
Total				**$83,640**	**$212,600**	**$148,120**

Other Costs associated with In-house costs		
Additional Cost of Travel and Fuel usage for In-House crews		
Travel	10%	$6,970
Fuel	10%	$6,970

Contractor Cost:					
Additional Costs should be added for the OSR.					
Assumption:					
Average		1PM	=1week		
OSR Costs for 1week			40hrs	$65/hr	$2,600
	2010	6	$15,600		
	2011	7	$18,200		
	2012	3	$7,800		
	2013	2	$5,200		
			$46,800		

In-House Costs:

The average costs were derived from the actual costs of the PMs that were completed in the given years using in-house crews. Additional costs (estimate) are captured separately in the table which include fuel and travel.

The number of PMs completed in the given years is as follows four in 2010, three in 2011, seven in 2012 and nine in 2013.

Contractor Costs:

The average costs were derived from the actual costs of the PMs completed in 2014 by contractor. The average costs for 2014 ($9,824) was reflected back to the previous years assuming a 2% escalation cost over the period. Additional costs are captured separately based on the need to have an On Site Representative (OSR) on-site during contractor work execution.

There were a total of 12 PMs completed in 2014 by the contractor.

Overall average costs are also contained in Table 1 as it is unknown how this work would have been accomplished during that time. The overall average cost is calculated between the cost of utilizing in-house crews and contractors.