

1    Q.    **Project E-2: Replace Generator Cooling Water Piping - Hinds Lake**

2            With reference to the “Justification” for this Project, please provide details with  
3            respect to the cost of piping, the cost of cleaning piping and Hydro’s anticipated  
4            future maintenance costs associated with the suggested 316 stainless steel  
5            schedule ten pipe.

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7    A.    The cost of stainless steel piping replacement is detailed in Table 1 and there is no  
8            future capital costs required in its useful life of at least 40 years. The corrosion  
9            resistance of stainless steel increases its useful life and reduces adhering of the  
10           organic material to the internal pipe surface; therefore, there would be no cleaning  
11           costs associated with the new piping. The future maintenance costs associated with  
12           stainless steel piping would also be minimal as stainless steel does not require  
13           painting and it has high resistance to corrosion.

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15           The cost of current piping cleaning is approximately \$47,000. The cleaning will not  
16           extend the useful life of the existing piping which is already near to the end of its  
17           useful life. Also, there are runs of pipe at Hinds Lake (approximately 25%) that will  
18           have to be replaced where removing of organic material is impossible. In addition,  
19           the piping cleaning does not provide a perfect internal pipe surface finish. In this  
20           case, the organic material will continue to adhere to the internal pipe surface more  
21           than the case when using new piping.

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Table 1: Budget Estimate

<b>Project Cost:</b> (\$ x1,000)	<b>2016</b>	<b>2017</b>	<b>Beyond</b>	<b>Total</b>
<b>Material Supply</b>	40.4	0.0	0.0	40.4
<b>Labour</b>	93.1	0.0	0.0	93.1
<b>Consultant</b>	0.0	0.0	0.0	0.0
<b>Contract Work</b>	0.0	0.0	0.0	0.0
<b>Other Direct Costs</b>	8.4	0.0	0.0	8.4
<b>Interest and Escalation</b>	11.4	0.0	0.0	11.4
<b>Contingency</b>	28.4	0.0	0.0	28.4
<b>TOTAL</b>	<b>181.7</b>	<b>0.0</b>	<b>0.0</b>	<b>181.7</b>