

1 Q. On pg. 6 of Exhibit 23 it is stated that a three-phase fault at Bay d’Espoir was  
2 deemed an “exceptional contingency” as the number of upgrades required to  
3 withstand such a contingency would be too costly. On pg. 7 it is stated that analysis  
4 was performed to determine the upgrades required to survive such a three-phase  
5 fault and the required upgrades are listed. What is the estimated cost to complete  
6 the identified required upgrades?

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9 A. The addition of a new 230 kV transmission line between Bay d’Espoir and Western  
10 Avalon is a common upgrade to the Island Interconnected System and to the  
11 continued isolated scenario regardless of any requirement to withstand the three  
12 phase fault at Bay d’Espoir. The current estimated cost of the new 230 kV  
13 transmission line is \$209.4 million.

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15 The 50% series compensation additions to permit withstand of the three-phase  
16 fault at Bay d’Espoir are rated 230 kV, 35.5  $\Omega$ , 1150 A, 70.7 MVAR each. A new 230  
17 kV series compensation station will be required to install the series capacitors as  
18 there is insufficient space at Sunnyside Terminal Station. The current estimate for  
19 the installation of series compensation on TL202, TL206 and for the new  
20 transmission line from Bay d’Espoir to Western Avalon is approximately \$40 million.

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22 The analysis in August 2010 indicated that the number and rating of synchronous  
23 condensers would be 3 x 150 MVAR if the system does not have to withstand the  
24 three-phase fault at Bay d’Espoir and 3 x 300 MVAR if the system was required to  
25 withstand the three-phase fault. Preliminary analysis of the application of the VSC  
26 technology indicated that the 300 MVAR high inertia synchronous condensers  
27 would be required in order to withstand a dc fault. Consequently, the 300 MVAR

1 synchronous condenser cost was carried as part of the DG2 estimate. Costs were  
2 not developed for a 150 MVAR synchronous condenser. The DG2 estimate for a  
3 300 MVAR high inertia synchronous condenser was \$60 million per each of the  
4 three units.