

1 Q. RE: p. B-13 Upgrade Controls on Spherical Valve # 5 – Bay d'Espoir  
2 (\$153,000)

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4 5.1 When was this equipment determined to be obsolete? By whom was  
5 this determination made? What was the rationale for the decision?

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7 5.2 Has the maintenance record of this equipment indicated that it has a  
8 high risk of failure? Is there other information that would cause the  
9 decision to replace this equipment at this time? Why has it been  
10 determined that valves 1, 2 and 3, which are older, can continue to be  
11 used?

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13 5.3 How has the company determined that the new Program Logic  
14 Controller is the appropriate replacement for the current equipment?

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17 A. 5.1 Operations and Generation Engineering personnel made this  
18 determination in the 1998 – 1999 period. The rationale for this  
19 decision was that it had become impossible to procure or manufacture  
20 spare parts for many components.

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22 5.2 The maintenance records indicate that there have been frequent  
23 failures in recent years. There is no other information that leads to the  
24 decision to replace this equipment. Valves 1 through 4 were built by  
25 one manufacturer while valves 5 and 6 were built by another. Valves  
26 1 through 4 are older and the equipment on valve 4 is being replaced  
27 in 2001. The equipment being made redundant from valve 4 will be  
28 used as spare parts for valves 1, 2 and 3 until that equipment can be

1 replaced. The schedule for replacement was based on the condition  
2 of the equipment on each valve.

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4 5.3 An in-house engineering review identified three spherical valve control  
5 options available, namely: 1) hydraulic or mechanical controls 2) PLC  
6 (Programmable Logic Control) based controls, and 3) hybrid solution  
7 consisting of mechanical and PLC systems. These three options were  
8 presented and discussed with the plant operating/maintenance staff.

9 Based on the discussions of the pros and cons of the options available  
10 and the plant personnel's experience with PLC systems, it was

11 concluded that Hydro should proceed with option 2.