

1 Q. **Tab C; Volume I: Projects \$500,000 and Over (Hydraulic Generation In-Service**
2 **Failures)**

3 Hydro states on page C-31 that “Hydro uses historical data and engineering
4 judgement to predict the magnitude of in-service failures.”

5

6 Please provide additional details of the engineering assessment of historical data
7 that is performed and used as the basis for the budget.

8

9

10 A. This budget was based upon an estimate considering two broad types of activities. The
11 first type was the purchase of the three pieces of Standby Pool Equipment detailed in
12 the proposal on page C-31. This type of activity is projected to cost approximately
13 \$459,000.

14

15 The second type of activity is refurbishing or replacing failed assets, which requires
16 prompt action to return the system to normal. These activities were included in the
17 project estimate drawing upon the estimator’s knowledge of past In-Service Failure
18 Projects Costs and likely frequency. The estimate was also adjusted to allow the
19 execution of a combination of some larger asset failure activities as well as the more
20 typical asset failure activities. This asset failure activity is projected to cost
21 approximately \$792,000.

22

23 The following table lists unplanned capital projects between 2013 and 2017, which are
24 characteristic of asset failure activities for the In-Service Failure Project.

Year	Actual Cost \$(000)	Project Description	Comments
2013	236.5	Refurbish Stoplogs - Burnt Dam Spillway	
2013	393.9	Replace Breaker - Hinds Lake	
2013	37.6	Replace Loggers - Hydrometric Stations	
2013	35.6	Burnt Dam Refurbishment of Heated Gate	
2014	71.1	Replace Excitation Transformer, Unit # 6 - Bay d'Espoir	
2015	29.1	Replace 125VDC Battery Bank - Paradise River Hydro Plant	
2015	46.6	Replace Unit 7 Carbon Seal - Bay d'Espoir	
2015	46.4	Replace Unit 7 Turbine Base Plate - Bay d'Espoir	
2015	37.2	Spare Turbine Bearing Refurbishment Unit 1-6 - Bay d'Espoir	
2015	49.5	Replace Unit 1 Turbine Guide Gearing - Bay d'Espoir	
2015	32.8	Thrust Bearing Refurbishment Units 1 - 6, Bay d'Espoir	
2016	1,517.9	Unit 4 Turbine Primary Seal Clearance - Bay d'Espoir	
2017	2,361.5	Unit 3 Turbine Rehabilitation - Bay d'Espoir	(forecast cost)

- 1 As more experience is gained with the asset failure activities rectified by the In-Service
- 2 Failure Project, estimates will be based more on historical asset failure activities and
- 3 less on engineering judgement.