

# EXECUTIVE SUMMARY

## Coquitlam – Dam Safety

### PURPOSE

- To receive Board approval for the Expenditure Authorization Request for construction of remedial measures for dam safety requirements at Coquitlam Dam.

### BACKGROUND

The Coquitlam Dam was built in 1913 and has undergone a number of upgrades and modifications. It has now been shown that the dam's hydraulic fill core and coarse granular shells are looser than originally thought and these materials will liquefy under a moderate to large earthquake.

As a result of these findings, the maximum operating level of El. 154.86 m was reduced to El. 149 m in December 2000 as an interim measure and an enhanced surveillance plan is implemented during periods of high inflow when the outlet capacity cannot keep the reservoir below El. 149m.

### NEW DEVELOPMENTS

Seismic Deficiency Investigations were initiated in 1999 and undertook extensive field and laboratory investigations. Various remedial options were considered, with two structural remedial options (upstream and downstream embankments), decommissioning, and permanent operational modifications investigated in more detail. The downstream embankment was determined to be preferred alternative as it is the least cost acceptable solution and has lower environmental impacts. This conclusion was reviewed and confirmed by the Advisory Board in July.

### MILESTONES

The project has reached the stage where a preferred option is being presented for approval to proceed with completion of the project definition and implementation stages. The next steps include:

- Approval by the Board of Directors to proceed;
- Reaching agreement with GVWD on pipeline relocation, cost and responsibility for implementation; and
- Begin the regulatory (environmental approval) process.

The current project schedule is based on being able to start construction activities on site by August 2004 and to complete the downstream embankment in 2006. To achieve this tight schedule, critical activities such as project approval, project regulatory approval, agreement with GVWD on pipeline relocation, and final design need to be initiated in October 2003.

## **THE BUSINESS CASE**

The cost for the new downstream embankment is estimated to be between \$40.0 (P50) and \$45.6 million (P90). This includes \$8.2 million for the GVWD to relocate their pipeline in the vicinity of the new embankment. BC Hydro believes that under current agreements with the GVWD, this latter cost is the responsibility of the GVWD and will notify the GVWD of our position upon approval to proceed.

The accompanying slides provide additional information on the impacts of these investments on the cost of electricity provided by Coquitlam. While these investments will increase the cost of electricity over the short term to very near the market value of electricity, the project continues to net benefits to BC Hydro's customers and shareholder over the next 20 years under base case conditions. In the longer term, the cost of electricity from Coquitlam is expected to be well below market prices.

## **RISK IDENTIFICATION / MITIGATION STRATEGIES**

The new embankment and pipeline relocation will impact the spawning channel and pool downstream of the dam. Informal meetings with Regulatory Agencies have identified potential compensation measures, but details have not been determined pending confirmation of the realigned pipeline requirements. Currently an allowance of \$0.6 million is included in the project cost estimate for environmental compensation measures.

Preliminary consultation discussions have been held with the federal and provincial environmental assessment agencies; Fisheries and Oceans Canada (DFO), the City of Coquitlam, the Greater Vancouver Regional District, and the Kwikwetlem First Nation.

As a result of the Coquitlam Water Use Plan process recently completed, there has been significant public information and discussion concerning the dam safety issues. Consequently, it is not anticipated that the dam safety project will raise issues, other than fish passage, requiring significant additional public consultation measures. It is intended to hold public meetings with the City of Coquitlam and other interested stakeholders during the environmental review process.

The re-introduction of anadromous salmon, specifically an early run of sockeye extirpated by the original dam construction, is a high profile issue with both the Kwikwetlem First Nation and the public in the Coquitlam area. Ongoing studies to confirm feasibility of reintroducing salmon are expected to take from 5 to 10 years to complete. Because of this time frame, it has been proposed to separate the fish passage issue from the dam safety remediation project and to manage it as a separate Bridge River Coastal initiative.

## **NEXT STEPS**

### **Dam Safety**

1. Reach agreement with GVWD on pipeline relocation, cost and responsibility for implementation;
2. Initiate the regulatory approval process.

## **FINAL RECOMMENDATION**

Approval is requested as per the resolution in the slides.