



CLIENT: BC Hydro | **LOCATION:** British Columbia

THE CHALLENGE:

The challenge for the "Cheakamus Project" was to raise the performance and improve the operability of the spillway facilities at seven dam sites in British Columbia.

The improved operational performance and lower operational risk was required at each spillway facility to satisfy the revised BC Hydro Spillway Reliability Criteria.

THE SOLUTION:

An EnterpriseIS Reliability Engineer was engaged to assess the conformance of the redesigned spillway gate system for the Cheakamus Dam with the Reliability Principles outlined in "Reliability Requirements for Flood Discharge Gate Systems, September 2006".

The spillway gate system was analysed using Reliability Block Modelling (RBM), Failure Modes Effects Analysis (FMEA) and Fault Tree Analysis (FTA) to identify the combinations of components whose failure would result in the failure of the spillway gate system. The intended output from the assignment was to identify how the design, maintenance and testing of each of the eleven essential gate operating functions (EGOF) met the specified reliability requirements.

THE RESULT:

- The report was completed on time, to BC Hydro and government standards
- The FTA was developed in an iterative manner, this allowed for a number of design changes to be incorporated during the development
- The report discussion identifies "Line of Defence"
- Common cause failure events all identified with mitigating actions.