

SEVEN SISTERS GENERATING STATION FAILURE MODES AND EFFECTS ANALYSIS

Manitoba Hydro

Winnipeg, Manitoba



In 2002, Manitoba Hydro retained KGS Group to organize and implement a Failure Modes and Effects Analysis (FMEA) for the Seven Sisters Generating Station to supplement a Dam Safety Review that was performed in 1998.

The FMEA was based on the Performance Parameter Process developed by the Bureau of Reclamation as part of its Dam Safety Program, and was facilitated by J. Lawrence Von Thun (USBR retired). The FMEA process involved a number of Manitoba Hydro personnel and consisted of:

- Gathering and reviewing all background information on the site and structures
- Identifying potential Failure Modes
- Discussing factors and conditions that make each potential failure mode more or less likely to occur (adverse and positive factors)
- Identifying potential actions and risk reduction measures (monitoring, investigation, remediation)
- Classifying each potential failure mode according to significance

The findings of the FMEA session were then documented, paying particular attention to describing each potential failure mode considered, referencing key "adverse / likely" and "positive / not likely" factors, appending key pieces of information or data that helped establish whether or not a potential failure mode was or was not highlighted, and recording potential risk reduction or investigative actions.