

DAM SAFETY REVIEW | MAIN DAM Deer Lake Power



Description of Services Provided:

Deer lake Power retained Meco to prepare a Dam Safety Review of Main Dam, located at Junction Brook, near the community of Deer Lake. The Main dam is an Ambersen design reinforced concrete buttress structure, 23.3m high and 225.6 m long. The spillway has a total length of 98.8 metres with a discharge capacity of 1840 m³/s at maximum flood level. Spillway discharge is controlled by eighteen (18) steel gates, 4.7m wide, which are lifted individually with a gantry crane equipped with two screw stems. The dam retains Grand Lake reservoir which forms the headwaters for the 125 megawatt (MW) plant located at Deer Lake, with a drainage basin of approximately 5000 km².

A Dam Safety Review as described by the CDA Guidelines, issued in 2007, which generally includes:

- A review of classification of all dams as a function of consequences of failure.
- A comprehensive site inspection to observe the condition of all dam structures
- A Review of Design and Construction using design criteria generated from the consequence classification. Two types of structures are reviewed; Concrete and Earth fill.
- A review inflow hydrology and hydraulics, including development of a recommended Inflow Design Flood and freeboard requirements.
- A review of management practices as they relate to emergency preparedness, operations, maintenance, surveillance and public safety around dams.
- The project team prepared a report of results of observations and analysis in a formal Dam Safety Review report, as outlined by the Canadian Dam Association.
- The report demonstrated that the dam was safe, or described actions required to make the dam safe, ranked them in terms of urgency and offered areas for improvement to the dam safety program.