



GEO-FOUNDATIONS
Contractors Inc.

Minden Generating Station



Date: 2003

Technology: Rock Anchors

Minden Generating Station is a 4-megawatt hydroelectric generation facility located at the old Workman' Falls site in Minden, Ontario. The station was built in the late 1930's, and is owned and operated by Orillia Power Generation Corporation. In early 2002, Geo-Foundations was awarded a 2-year contract to rehabilitate the dam structure as part of Orillia Power's strong ongoing commitment to safety.

The scope of work for this multi-faceted project included removal of the entire downstream dam face (last rehabilitated with new shotcrete facing in 1980), and a comprehensive grouting program to seal horizontal and vertical construction joints using expansive chemical grouts. Prior to the final phase of work – replacement of the downstream dam face with new mesh-reinforced wet mix shotcrete – nine high capacity, post-tensioned strand anchors were installed through the deepest portions of the spillway and intake block.



High-capacity rock anchor drilling from barge access

Drilling of the 152mm diameter x 25 metre deep anchor holes was completed using down-the-hole hammer on a customized mast-mount sitting on a barge in Minden Lake. The anchors are 7-strand, Class 1 corrosion protected anchors, each post-tensioned to test load 1250kN, and locked off at 1100kN.



16-metre high dam at Minden GS, as seen at end of 2002



Multi-strand rock anchors as seen after grouting