Kelsey Generating Station Spillway Rollway Grouting and Deck Repairs

STRUCTURE: Kelsey Generating Station Spillway and Powerhouse

LOCATION: Kelsey, Manitoba

PROJECT DATE: 1984 & 1985

JOB DURATION: 2 Years

CONTRACT AMOUNT: $775,000

CLIENT: Manitoba Hydro

CONTRACTOR: Vector Construction Group

PROJECT DESCRIPTION:

Due to poor concrete consolidation during the original construction there were voids in the concrete of the Spillway Rollways. To complicate matters, water was leaking through the concrete, causing further deterioration. In another area, on the Powerhouse deck, the concrete had deteriorated from freeze-thaw action which had been accelerated by de-icing salts.

To fill the void in the Spillway Rollways cementitious grouting was chosen. Holes were drilled on a grid pattern through the concrete and into the bedrock below. The holes were then watertested to establish the location of the voids and their size. A fluid cement grout was pumped under pressure through the holes, filling the voids and any cracks in the rollway concrete. This provided a solid leakproof rollway.

The Powerhouse deck was repaired by removing the deteriorated concrete and pouring new air-entrained higher strength concrete to replace it. Also, at the same time the leaking expansion joints were replaced with new compressive seal type joints.

For this project, Vector worked with the Split Lake First Nation to provide employment and training for several it’s band members. They were hired and provided with on the job training in construction labour, rock drilling, concrete work, and cementitious grouting.