TransCanada – Napanee 900MW Generating Station

CLIENT
TransCanada

LOCATION
Greater Napanee, Ontario

Project Description

Napanee Generating Station (NGS) was established as a 900 megawatt (MW), combined cycle, natural gas-fuelled electrical power generating station located in the Town of Greater Napanee, in Eastern Ontario. The facility was scheduled to be completed by the end of 2018. Prime movers included two 271 MW natural gas turbines and one 457 MW steam turbine. The NGS was designed as a flexible power system resource able to start and stop daily and to vary its output throughout the day to assist in filling the gap between Ontario's electrical demand and other available generating resources.

Black & McDonald (B&M) was engaged by TransCanada to perform the electrical completion work on all balance of plant electrical power systems associated with the NGS.

B&M Scope of Work

The scope of work involved the installation of 570 km of cable installation, 14 km of cable tray and/or conduit and over 88,000 cable terminations. Additional scope of work included the installation of a high ampacity medium voltage isolated phase bus system, 5 kV and 600 V non-segregated bus-ducts, the completion of a partially constructed 500 kV switchyard, the installation of a 125VDC power system to include battery rooms and UPS systems. The installation of electrical equipment included panel boards, switchboards, disconnect switches, marshalling cabinets and other electrical apparatus also associated with the scope of work.

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Problems Solved

B&M scope of work required over 650,000 hours of craft labour to be expended to complete the project, involving approximately 350 IBEW tradespeople. Management support teams in areas of health, safety and environmental (HSE) matters, quality control and quality assurance (QA/QC), project controls, scheduling, purchasing, and general management involved a staff of 50. To execute the project within the schedule an around the clock work operation involved both a day time shift and a night time shift.

Innovative Process or Technology Used

The project team included a broad operation to meet the requirements of the client to include a VP sponsor, a Senior PM, discipline PMs, an Operations Manager, Project Directors in both HSE and QA/QC disciplines, Quality Control Inspectors, Electrical Supervisors, General Foremen and Foremen, IBEW electricians, a Purchasing Agent, Project Coordinators, Quantity Surveyors and Summer Student Interns.

In addition to the scope of work referenced in this profile B&M's Field Service Division (FSD) was retained 2017 to perform high voltage testing and commissioning services on the 500 kV switchyard for the generating plant under a separate contract. The B&M FSD team successfully completed all activities and participated in the energization of the 500 kV switchyard. The B&M FSD scope of work has since expanded and they are currently performing balance of plant electrical testing and commissioning directly to TransCanada under a separate contract at the generating facility.