



Conestoga-Rovers & Associates Project Summary

KEY PROJECT ELEMENTS

- Project Management
- Detailed Electrical Design
- Hydro Utility Liaison
- Electrical Safety Authority Liaison
- Detailed Mechanical Design
- Gas Utility Liaison
- Technical Standards and Safety Authority Liaison
- Air Modeling and Assessment
- Ministry of Environment Permitting (Air)
- Environmental Site Assessments
- Construction Management and Supervision
- Site Health and Safety
- Geotechnical Site Investigation and Assessment (Inspec-Sol)

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TEMPORARY POWER PROJECT – ONTARIO ELECTRICITY FINANCIAL CORPORATION GREATER TORONTO AREA, ONTARIO



CLIENT: TOROMONT CAT
DURATION: JUNE – JULY 2003
POWER: 115 MWE PEAK SHAVING

CRA provided project engineering services to Toromont CAT, under contract to the Ontario Electricity Financial Corporation (OEFC), to design, construct and commission three temporary natural-gas power generation facilities in the Greater Toronto Area to help sustain the Ontario electricity grid in the event of anticipated power shortages during the summer of 2003.

Time and logistics were the greatest challenges influencing the execution of this turnkey project. 115 MW of power had to be engineered, constructed, and commissioned within an 8-week period with the first online date just 6 weeks following award of the contract. Excellent communications and unprecedented teamwork were required to move and install \$85 million worth of capital assets consisting of 2,200 tonnes of equipment and 3.65 kilometers of high voltage cabling, utilizing approximately 25,000 man-hours in the process.

The project was executed at three different sites in the Greater Toronto Area. The Markham site, which utilized natural gas turbine generation, was constructed with a capacity of 98.8 MW. The Concord and Beare Road sites each utilized natural gas reciprocating engine technology with power capacities of 8.75 and 7.5 MW, respectively. Each site required site preparation and earthworks; installation of electrical ground grids; installation of natural gas metering stations; installation of high pressure and low pressure natural gas piping; installation of natural gas train assemblies; installation of high voltage overhead pole lines; procurement and installation of electrical transformation from utility voltage to generator voltage; provision of electrical interconnection cabling for power, communications, and signals; development and installation of utility protection schemes as required; installation of site fencing and security; and assembly of generation equipment, exhaust systems, ventilation systems, and other ancillary equipment.

CRA provided engineering services including project management, design management, construction management, electrical engineering and approvals, mechanical engineering and approvals, air permitting, environmental site assessments, logistics, construction support, project safety oversight, and commissioning oversight.

Under an intensely compressed schedule, the duration of the project was 8 weeks from the approval to proceed to the generation of power. The project was delivered on schedule and within budget.