

Ringbeam Repairs of Nuclear Power Plant Reactor Unit #1

STRUCTURE: Nuclear Reactor Building
(decommissioned)
Ring Beam

LOCATION: Gentilly, Quebec

PROJECT DATE: March, 2001

PRODUCT USED: SikaGrout 212, SikaRepair 223/225,
MBrace Strengthening System,
Galvashield XP Galvanic Anodes

JOB DURATION: 4 Months

CLIENT: Atomic Energy of Canada Limited
(AECL)

AREA: 27 cu.yds. Concrete Repairs,
8000 sq.ft. FRP Wrap

CONTRACTOR: Vector Construction Ltd.



PROJECT DESCRIPTION:



Between 1998 and 2000 the assessment of structural integrity of the ringbeam at Gentilly-1 was conducted. A study was undertaken to determine the condition of the structure and develop a plan of actions needed to ensure satisfactory performance over a required period of 60 years. After conducting intensive investigations AECL has concluded that the ringbeam of the G1 reactor required a substantial amount of structural repairs. Vector assisted AECL and ISIS Canada in the development and selection of the repair method for this project. Ultimately the solution included structural repairs of concrete areas divided into shallow and deep repairs, followed by a glass fiber wrap to be installed on the entire surface of the ringbeam to confine and protect the existing and new concrete areas. A matching topcoat was to be installed on top of the FRP system to provide UV protection for the FRP system and for esthetic reasons. Vector Construction started the project promptly within three weeks following the contract award. In addition to managing and completing the work Vector also assisted AECL engineering personnel with the selection of most appropriate repair method, selection and specification of specific work methods and details for each individual repair location. One unique aspect of the project was the access to the repair areas that were located at plus 160 ft. elevation. Overcoming all difficulties the project was completed on time and with quality to the satisfaction of the owner.



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