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Niagara Mohawk

Richard B. Abbott
Vice President
Nuclear Engineering

Office: (315) 349-1812
Fax: (315) 349-4417

September 21, 1998
NMP2L 1823

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: Nine Mile Point Unit 2
Docket No. 50-410
NPF-69

Subject: *Request for Additional Information Regarding Nine Mile Point Unit 2 Core Shroud Evaluation (TAC No. MA2286)*

Gentlemen:

Our letter dated July 9, 1998 submitted the results of the inspection of the Nine Mile Point Unit 2 (NMP2) core shroud during refueling outage number 6 and provided our evaluation to support continued operation of NMP2 (GENE-B13-01920-63, Rev. 2). The NRC's letter dated August 24, 1998 requested additional information regarding our submittal. The attachment to this letter and the enclosed report provide this information.

Sincerely,



Richard B. Abbott
Vice President Nuclear Engineering

RBA/JMT/kap
Attachments

xc: Mr. H. J. Miller, NRC Regional Administrator
Mr. B. S. Norris, Senior Resident Inspector
Mr. S. S. Bajwa, Director, Project Directorate I-1, NRR
Mr. D. S. Hood, Senior Project Manager, NRR
Records Management

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ATTACHMENT

REQUEST FOR ADDITIONAL INFORMATION

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT 2

Request for Information

For the compound flaw at horizontal weld H4, you apply a stress intensity factor formula, Equation (4-1), which is applicable for R/t values ranging from 5 to 10. Please provide details supporting your following statement: "The R/t value for the shroud geometry is approximately 50. However, a review of available analytical solutions for throughwall and part-through-wall circumferential cracks showed that the stress intensity factor predictions of Equation (4-1) are conservative. Therefore, the use of Equation (4-1) for this evaluation was justified."

Response

Regarding our July 9, 1998 submittal, the analysis for the core shroud was performed using a solution by Zahoor (Equation 4-1 of the General Electric (GE) Report GENE-B13-01920-63, Rev. 2) for a compound crack. The Zahoor solution is applicable to geometries with a radius to thickness ratio (R/t) of 5 to 10. The Nine Mile Point Unit 2 (NMP2) core shroud has a R/t ratio of approximately 50. As indicated in the GE report, a review of available analytical solutions for through-wall and part-through-wall circumferential cracks showed that the stress intensity factor predictions of Equation 4-1 are conservative.

A separate Linear Elastic Fracture Mechanics (LEFM) evaluation of welds H4 and H5 using detailed finite element analysis methods was performed by Structural Integrity Associates (SIA) per the attached report, SIR-98-069, to verify the results of the GE analysis. The SIA analysis established that the Zahoor correction factors used by GE are conservative for the NMP2 shroud geometry, and therefore, supports the above statement.

