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February 2, 1998
NMP2L 1753

JOHN T. CONWAY
Vice President
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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

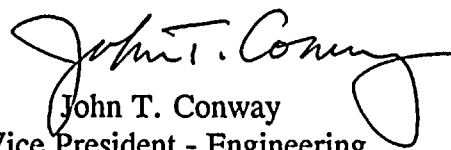
RE: Nine Mile Point Unit 2
Docket No. 50-410
NPF-69

*Subject: Supplemental Response to Generic Letter 94-03, Intergranular Stress
Corrosion Cracking of Core Shrouds in Boiling Water Reactors*

Gentlemen:

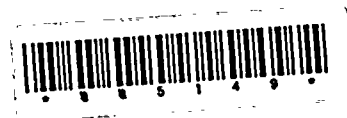
On July 25, 1994, the NRC issued Generic Letter (GL) 94-03, Intergranular Stress Corrosion Cracking of Core Shrouds in Boiling Water Reactors. GL 94-03 requested that addressee's inspect their plant's core shroud, perform an appropriate evaluation and/or repair based on these inspections, and perform a safety analysis supporting continued operation of the facility until inspections are conducted. In our initial response dated August 23, 1994, Niagara Mohawk Power Corporation committed to provide the NRC the Nine Mile Point Unit 2 core shroud inspection plan as well as contingency plans for the evaluation and/or repair of the core shroud three months prior to performing the inspections. The attachment to this letter provides the subject plans.

Very truly yours,


John T. Conway
Vice President - Engineering

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Attachment



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

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ATTACHMENT

Background

As committed to in our letter dated August 23, 1994, and in accordance with Reporting Requirement No. 2 of NRC Generic Letter (GL) 94-03, and the NRC's Safety Evaluation of our response to GL 94-03, Niagara Mohawk Power Corporation (NMPC) is submitting the following inspection, evaluation and repair plans for the Nine Mile Point Unit 2 (NMP2) core shroud. These plans were developed for implementation during refueling outage six (RFO6) at NMP2, which is scheduled to begin on May 2, 1998.

The inspection methods, scope, and flaw evaluation criteria of this inspection plan satisfy the recommendations of the Boiling Water Reactor Vessel and Internals Project (BWRVIP), as specified in BWRVIP-01, Rev. 2, "BWR Core Shroud Inspection and Flaw Evaluation Guidelines," dated October 1996 and the subsequent change letter dated December 10, 1997 from Carl Terry, Chairman BWRVIP to C.E. Carpenter of the NRC. Key factors considered in the development of the plan include: reactor hot operating years, materials of fabrication, water chemistry history, fabrication processes, neutron fluence, available inspection techniques, accessibility, equipment and current industry experience. The NMP2 core shroud is considered to have low potential for Intergranular Stress Corrosion Cracking (IGSCC) due primarily to the material, age and water chemistry history.

NMP2 will exceed eight hot operating years during Operating Cycle 7. In accordance with BWRVIP-01 for plants with 304L carbon steel core shrouds, good water chemistry history and > 8 hot operating years, the unit is categorized a Category B plant and requires limited inspections. NMPC will initiate the required inspections for a Category B plant during RFO6, the next regularly scheduled vessel internals inspection outage.

Scope of Inspection

The NMP2 core shroud welds can be divided into four groups:

1. Shroud attachment welds
2. Shroud vertical welds
3. Shroud support structure welds
4. Shroud circumferential welds

The attachment welds, vertical welds and support structure welds have been excluded from the NMP2 initial inspection plan. The basis for this exclusion is addressed in Section 3 and Appendix A of BWRVIP-01.

For the shroud circumferential welds, NMP2 plans to follow the BWRVIP-01, Category B inspection recommendations. The inspection recommendations are for limited inspection of H-3, H-4, H-5, and H-7 shroud welds. NMPC intends to utilize the longest re-inspection interval allowed by the BWRVIP Guidelines For Reinspection of BWR Core Shrouds (BWRVIP-07) following the baseline inspection. Therefore, we will perform an examination of 100% of the accessible regions of H-3, H-4, H-5, and H-7 during RFO6.



Method/Extent of Inspection

The examination method planned for these initial inspections is Ultrasonic Testing (UT) from the outside surface of the shroud. The UT will be performed in accordance with the BWRVIP-03, "BWR Vessel and Internals Project Reactor Pressure Vessel and Internals Examination Guidelines." This method will interrogate the volume of the subject welds and associated heat affected zones for cracking initiating on the inside surface (ID) and the outside surface (OD) of the shroud. The UT equipment planned for use in these examinations is provided and operated by General Electric (GE). Scanning will be performed utilizing GE's OD tracker and/or new scanners designed for BWR core shroud welds. This equipment is designed to maximize the ability to access the shroud welds.

The extent of examination for each of the circumferential welds will vary depending on the specific characteristics (i.e., accessibility relative to vessel components and unexpected interference) and the ability of the state-of-the-art inspection equipment being utilized. If cracking in segments are found, NMPC will perform additional inspections as established by the BWRVIP.

Evaluation

Evaluation of the examination results will be performed in accordance with BWRVIP-01. A combination of fracture mechanics methodologies will be utilized based on neutron fluence. The method applied, based on exposure, will be load limit, linear elastic fracture mechanics or elastic-plastic fracture mechanics.

Repair

NMPC does not anticipate the need for repairs during RFO6 and, as such, no repair plans are in place for the outage. However, should the need for repairs arise, NMPC intends to follow the BWRVIP guidelines for repair design and repair plan submittals provided in BWRVIP-02, "BWR Core Shroud Design Criteria," and BWRVIP-04, "Guide for Format and Content of Core Shroud Repair Design Submittals."

Examination Results

In accordance with Reporting Requirement 3 of GL 94-03, NMPC will report the results of the RFO6 core shroud examinations within 30 days of their completion.

Reinspection Plans

The scope and frequency of future core shroud examinations will be performed in accordance with BWRVIP-07, "Guidelines for Reinspection of Core Shrouds."



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