

50.55(e)

August 28, 1981

Office of Inspection and Enforcement
Region I
Attention: Mr. E.J. Brunner, Acting Director
Division of Resident and Project Inspection
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406



Dear Mr. Brunner:

Re: Nine Mile Point Unit 2
Docket No. 50-410

Enclosed is the final report in accordance with 10CFR50.55(e) for voids in concrete found adjacent to the primary containment equipment hatches. These voids became apparent when the forms were removed following the concrete pour. This condition was originally reported to Mr. R. Feil of your staff as a potential deficiency on July 24, 1981.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

A handwritten signature in cursive script, appearing to read "Gerald K. Rhode".

Gerald K. Rhode
Vice President
System Project Management

PEF:bd

Enclosure

cc: Director of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT UNIT 2
DOCKET NO. 50-410

FINAL REPORT TO POTENTIALLY REPORTABLE
10CFR 50.55(e) DEFICIENCY REGARDING
CONCRETE VOIDS AROUND PRIMARY CONTAINMENT
EQUIPMENT HATCHES

Description of the Deficiency

After removal of the forms following a concrete placement of the primary containment wall between elevations 272 and 289 feet, exposed rebars were found on the outside surface in the region of the equipment hatch openings at azimuths 135° and 315°. A further investigation using a sounding technique was performed to determine if the potential for voids also existed on the primary containment liner side of the wall. The investigation has determined a number of regions of suspect concrete-to-liner contact.

It is believed this condition resulted from incomplete consolidation of the concrete due to improper vibration. In this instance steps in the placement of concrete, which could have prevented voids in this very congested area, were not utilized. This was an isolated case and there are no other similar placements.

Analysis of Safety Implications

Outside Wall Surface

Although there are established procedures for reworking voids in concrete after form removal, the question of safety implications, had the voids and exposed bar gone undetected, was considered. A review of the design calculations was conducted and it has been determined that, considering conservative estimates of corrosion under reactor building atmospheric exposure, the number 18 rebar would lose about 20% of its strength over the life of the plant. In accordance with our review, the containment structural integrity would remain adequate though design margins would be reduced.

Inside Wall Surface (Liner Side)

The regions of questionable concrete to liner contact has been investigated. The review of the design calculations has indicated that the total stresses in the liner, including additional bending stress in questionable areas, will, based on preliminary analysis, remain within allowable design limits. It has been determined that the larger voids found on the outside wall do not exist on the liner side of the wall. Therefore, should the smaller potential voids on the inside wall exist, they would not adversely affect the intended function of the liner.

Corrective Action

The voids discovered on the outside wall of the primary containment will be repaired by removing all honeycombed concrete and filling the voids with grout. This repair work relating to this condition is documented in a procedure developed and approved by the engineers and is available for review on site. On the liner side no repair is anticipated; however, a detailed verification of design calculations still must be completed. This verification will be completed by December 15, 1981. If repair is later determined to be required, your office will be so notified.

In order to minimize the occurrence of similar problems in the future, a training program for the craftsmen for concrete placement was conducted at the site on July 8, 1981.