April 5, 2002

MEMORANDUM TO: Joel T. Munday, Acting Chief, Section 1 ***/RA by PTam for JMunday/***
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Robert Clark, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MARCH 29, 2002, CONFERENCE CALL REGARDING RG&E POST-INSPECTION RESULTS OF THE REACTOR PRESSURE VESSEL HEAD (TAC NO. MB4548)

On March 29, 2002, a conference call was held with members of the U.S. Nuclear Regulatory Commission (NRC) staff and representatives from Rochester Gas and Electric Corporation, the licensee for Ginna Nuclear Power Plant. The purpose of this call was to discuss the licensee's preliminary results of their inspection of the reactor pressure vessel head. This conference call summary supersedes the summary issued on April 3, 2002. A correction was made to the information in the last paragraph. Thus, the April 3 summary should be discarded.

The reactor pressure vessel head inspection consisted of: 1) a 100% visual inspection of the block insulation located on top of the reactor pressure vessel head inside the shroud support ring; 2) ultrasonic testing to verify the thickness of the head around the center control rod drive mechanism (CRDM) penetration nozzle; and 3) ultrasonic testing of that portion of the head located outside the shroud support ring where four nearby instrument ports had previously experienced boric acid leakage. The licensee asserted that a potential through-wall crack in a penetration nozzle, J-groove weld or leakage from above the reactor pressure vessel head would lead to accumulation of boric acid and corrosion products at the head/insulation interface, in the annulus between insulation and nozzle, and above the insulation. The licensee also postulated that if the boric acid deposits and corrosion products were to accumulate at the head/insulation interface, the accumulation would eventually exert sufficient force on the insulation to cause displacement or cracking.

Based on the results of the visual inspection, the licensee stated that the block insulation within the shroud support ring was in very good condition with only minor cracks or gaps in the insulation. The licensee also stated that some minor staining (brown spots) was present on top of the insulation and that white shading was also observed on certain CRDM nozzles. However, there was no evidence of boric acid deposits or corrosion products on the outside surface of the insulation and no visible indication of distortion (displacement or cracking) of the block insulation due to boric acid/corrosion product uplifting.

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In areas where the insulation was damaged (stained, missing or cracked), the licensee removed small pieces of the insulation to expose the bare metal of the head. These areas showed no evidence of boric acid deposits nor any evidence of degradation. Upon careful examination of the discolored areas, the licensee determined that the brown coloring on top of the block insulation was due to previous conoseal leaks from instrument ports and was not the result of corrosion products. The white coloring observed on some of the nozzles (near the canopy seal weld) was due to white developer overspread while performing Section XI weld inspections and was not boric acid deposits. The licensee also analyzed block insulation samples (i.e., the ones removed to expose the bare metal of the head) and determined that no significant radioactivity was present (providing some assurance that no significant leakage had occurred).

In addition to the above, bare metal inspections of several penetration nozzles were performed using a video camera to look into the annulus between the block insulation and nozzle. The licensee stated that the video inspection did not reveal any crystalline deposits around the penetration nozzles. The licensee also removed the block insulation from the head outside the shroud support ring to perform bare metal inspection of the head in this region. No boric acid deposits or corrosion products were observed coming out of the shroud support ring from under the insulation.

The ultrasonic testing (UT) examination on the center CRDM penetration nozzle from beneath the head indicated that head thickness was well within design limits and that there was no physical evidence of reactor vessel head corrosion (i.e., no material loss). The licensee also performed UT examination for wall thickness of the reactor pressure vessel head outside the shroud support ring on the downhill side of four instrument ports. The results indicated that the head thickness was well within design limits.

Based on the preliminary findings from Davis-Besse, the inspections performed by the licensee, and the licensee's susceptibility to nozzle cracking, the NRC staff did not identify any issues that needed additional follow-up prior to plant restart. The staff will document its formal review after receiving the licensee's Bulletin 2002-01 response.

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In areas where the insulation was damaged (stained, missing or cracked), the licensee removed small pieces of the insulation to expose the bare metal of the head. These areas showed no evidence of boric acid deposits nor any evidence of degradation. Upon careful examination of the discolored areas, the licensee determined that the brown coloring on top of the block insulation was due to previous conoseal leaks from instrument ports and was not the result of corrosion products. The white coloring observed on some of the nozzles (near the canopy seal weld) was due to white developer overspread while performing Section XI weld inspections and was not boric acid deposits. The licensee also analyzed block insulation samples (i.e., the ones removed to expose the bare metal of the head) and determined that no significant radioactivity was present (providing some assurance that no significant leakage had occurred).

In addition to the above, bare metal inspections of several penetration nozzles were performed using a video camera to look into the annulus between the block insulation and nozzle. The licensee stated that the video inspection did not reveal any crystalline deposits around the penetration nozzles. The licensee also removed the block insulation from the head outside the shroud support ring to perform bare metal inspection of the head in this region. No boric acid deposits or corrosion products were observed coming out of the shroud support ring from under the insulation.

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