November 10, 2005

Mrs. Mary G. Korsnick
Vice President R.E. Ginna Nuclear Power Plant
R.E. Ginna Nuclear Power Plant, LLC
1503 Lake Road
Ontario, NY 14519

SUBJECT: R.E. GINNA NUCLEAR POWER PLANT - SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION RE: EXTENDED POWER UPRATE LICENSE AMENDMENT (TAC NO. MC7382)

Dear Mrs. Korsnick:

By letter to the Nuclear Regulatory Commission (NRC) dated July 7, 2005, as supplemented by letters dated August 15 and September 30, 2005, R.E. Ginna Nuclear Power Plant, LLC submitted an application requesting authorization to increase the maximum steady-state thermal power level at the R.E. Ginna Nuclear Power Plant from 1520 megawatts thermal (MWt) to 1775 MWt, which is a 16.8 percent increase. This requested change is commonly referred to as an extended power uprate.

The NRC staff is reviewing your submittal and has determined that additional information is required to complete its review. The specific information requested is addressed in the enclosed request for additional information (RAI). During a telephone discussion with your staff on November 8, 2005, it was agreed that your response would be provided 45 days from the date of this letter.

If circumstances result in the need to revise the requested response date or you need clarification about the RAI questions, please contact me at (301) 415-1457.

Sincerely,

/RA by Richard Guzman for/

Patrick D. Milano, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosure: RAI

cc w/encl: See next page

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Enclosure: RAI
cc w/encl: See next page
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R.E. Ginna Nuclear Power Plant

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SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION

REGARDING THE EXTENDED POWER UPRATE LICENSE AMENDMENT

R.E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

By letter to the Nuclear Regulatory Commission (NRC) dated July 7, 2005 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML051950123), as supplemented by letters dated August 15 and September 30, 2005 (ADAMS Nos. ML052310155 and ML052800223, respectively), R.E. Ginna Nuclear Power Plant, LLC (the licensee) submitted an application requesting authorization to increase the maximum steady-state thermal power level at the R.E. Ginna Nuclear Power Plant (Ginna) from 1520 megawatts thermal (MWt) to 1775 MWt, which is a 16.8 percent increase. This requested change is commonly referred to as an extended power uprate (EPU). To complete its review, the NRC staff requests the following information:

PROTECTIVE COATING SYSTEMS (PAINTS) - ORGANIC MATERIALS

1. The Licensing Report (Attachments 5 and 7 to the July 7 applications for proprietary and non-proprietary versions) refers several times to "coating systems" inside the containment at Ginna. According to the temperature evaluation in Section 2.1.7.2.3, however, only one system was evaluated for compatibility (Carbozinc-11 primer and Phenoline 305 top coat). Are the evaluations bounding for other coating systems at EPU conditions?

2. On page 2.1.7-4, the Licensing Report states that clogging of containment emergency sumps is not "addressed as a power uprate issue in this report," and resolution is ongoing between the licensee and the NRC (see NRC Generic Letter 2004-02). Confirm that your resolution of the containment sump clogging issue is addressing EPU conditions.

3. In Section 2.1.7.1 on the Current Licensing Basis, the discussion refers to quality assurance requirements for "new coatings and coating configuration changes." Provide examples to explain the meaning of coating configuration changes. Are the evaluations for coating configuration changes bounding for EPU conditions?

4. Section 2.1.7.2.1 of the Licensing Report states that preventative actions are taken to remove and replace degraded paint, but it does not indicate how long degraded areas are allowed to remain in service before repair. Discuss your requirements for removing and replacing degraded paint, and any effects of EPU conditions on these requirements.

5. Section 6.1.2.9 of the Ginna Updated Final Safety Analysis Report (UFSAR), Revision 18, states that organic materials would generate insignificant quantities of organic gases and hydrogen under design-basis accident conditions. Has this evaluation been performed, and the same conclusion reached, for EPU conditions?

Enclosure

FLOW-ACCELERATED CORROSION (FAC)

1. If a component is considered susceptible to FAC under EPU conditions but cannot be inspected, how will it be evaluated?

2. Describe a sample of the most recent repairs and replacements performed as a result of FAC. Include in the description: the component replaced, the type of degradation, actions to prevent recurrence, and how this experience was used to update the FAC program for existing and EPU conditions.

3. On Page 2.1.8-5, the Licensing Report defines t_{min} as "the calculated minimum allowable wall thickness." In the "Component Repair/Replacement" discussion on Page 2.1.8-8, a structural integrity evaluation is described for instances where the measured wall thickness (t_{meas}) is less than t_{min}. Evaluating a component in this condition appears to contradict the definition of t_{min} as a minimum allowable wall thickness. In Electric Power Research Institute (EPRI) Report NSAC-202L-R2, suitability for continued service is based on a current wall thickness, acceptable wall thickness, and predicted wall thickness at the time of the next inspection (all at a given location). Clarify the definition of t_{min}, how it is determined, and how it is used in evaluating inspection results.

4. According to Page 2.1.8-8 of the Licensing Report, if t_{meas} is less than t_{min}, a structural integrity evaluation is performed on the component, and this structural evaluation is continued if the predicted minimum thickness is less than or equal to 87.5% and greater than 30% of nominal wall thickness. Describe these structural evaluations and the acceptance criteria.

5. Regarding the Small Bore Erosion/Corrosion (E/C) Program, Page 2.1.8-9 of the Licensing Report states the elements of the E/C are applicable to small bore piping with some exceptions. The same page also has a statement that the criteria for repair/replacement of piping are consistent with the EPRI NSAC-202L-R2 guidelines. Appendix A7.0 (Evaluating Inspection Results) of NSAC-202L-R2 notes that wear-rate predictions in small bore piping are unreliable if the operating conditions are not known and constant, and it recommends making repair/replacement decisions based on the inspection results for that outage. Since the Component Repair/Replacement section in the Licensing Report outlines a process and criteria based on wear-rate predictions, it is not clear that repair/replacement decisions for small bore piping are consistent with the EPRI guidelines. Clarify this aspect of your Small Bore E/C Program.

6. According to the E/C program description on Page 2.1.8-4 of the Licensing Report, piping with a nominal diameter less than 3/4 inch (other than service water piping) is excluded from the program. Explain the basis for this exclusion.

STEAM GENERATOR (SG) TUBE INSERVICE INSPECTION

1. The SG design criteria include requirements (see Appendix G to Part 50 of Title 10 of the *Code of Federal Regulations*, and American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code)) relating to fracture toughness. Confirm that the SG materials will have the required fracture toughness under EPU conditions.

2. Confirm that the evaluation of the effect of EPU conditions on the SGs addresses the current condition of the SGs, such as tube plugs and any modifications to the as-built configuration.

3. Since loose parts may affect tube integrity, discuss the presence of loose parts in the SGs, and if loose parts are present, discuss the evaluations to demonstrate that the parts will not compromise tube integrity for the period of time between inspections under the EPU conditions.

4. Confirm the 40% through-wall plugging limit for tubes remains appropriate for EPU conditions according to Regulatory Guide (RG) 1.121 analysis.

5. The NRC staff notes that Technical Specification 5.5.8.b permits tube sleeving in the replacement SGs. Confirm that the analysis previously submitted to support sleeving specifically addressed the replacement SGs, and provide the reference for this analysis. If the analysis did not address sleeving for the replacement SGs, discuss your plans to either remove the sleeving option from the TSs or submit the relevant analysis for staff review and approval (or the basis for why staff review and approval is not required).

6. Identify the material specifications for the SG closure bolting (e.g., handhole and manway studs), and confirm that the materials comply with Sections II and III of the ASME Code.

7. Confirm that your evaluation has concluded the tube material will be compatible with the primary and secondary coolant at EPU conditions.

8. The SG thermal-hydraulic, tube vibration, and wear analyses were performed for 0% and 10% tube plugging. Is 10% tube plugging equal to or greater than that assumed in your currently approved accident analyses?

SG BLOWDOWN SYSTEM

1. According to Section 2.1.10.2.1 in the Licensing Report, the SG blowdown system is designed for a periodic surge rate of up to 150 gallons per minute (gpm) for each SG, and that the anticipated blowdown flow under EPU conditions will be 40 to 100 gpm. Section 10.7.5.1 of the Ginna UFSAR, Revision 18, describes the ability to blow down both SGs through a single cross-tie line when one of the flow control valves is under maintenance. This suggests that a flow rate through some components may be 80 to 200 gpm at EPU conditions. Clarify this aspect of the system, and confirm that EPU conditions for the SG blowdown system components remain bounded by design conditions during periods where blowdown from both SGs is routed through a single line.

2. Section 10.7.5.1 of the Ginna UFSAR, Revision 18, states the blowdown system is designed for a periodic surge rate of 150 gpm per SG. Section 10.7.5.3 of the UFSAR states both SG blowdown lines are designed for a short-duration surge of 300 gpm. Clarify the apparent discrepancy between these surge-rate design values.