UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 12, 2010

Mr. Samuel L. Belcher
Vice President Nine Mile Point
Nine Mile Point Nuclear Station, LLC
P.O. Box 63
Lycoming, NY 13093

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING NINE MILE POINT NUCLEAR STATION, UNIT NO. 2 – RE: THE LICENSE AMENDMENT REQUEST FOR EXTENDED POWER UPRATE OPERATION – REACTOR SYSTEMS REVIEW (TAC NO. ME1476)

Dear Mr. Belcher:

By letter dated May 27, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091610103), Nine Mile Point Nuclear Station, LLC (NMPNS or the licensee) submitted a license amendment request (LAR) for Nine Mile Point, Unit No. 2 (NMP2). The proposed amendment requests an increase in the maximum steady-state power level at NMP2 from 3467 megawatts thermal (MWt) to 3988 MWt. This represents a 15-percent increase over the current licensed thermal power (CLTP).

Based on its review of the LAR and the supplemental information provided by the NMPNS in letters dated February 19, 2010 (ML100550599), June 3, 2010 (ML101610168), and July 30, 2010 (ML102170184), the NRC staff has determined that additional information is needed to support its review. Enclosed is the NRC staff's request for additional information (RAI). The RAI was discussed with your staff on November 4, 2010, and it was agreed that your response would be provided within 30 days from the date of this letter.

Sincerely,

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-410

Enclosure:
As stated

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REQUEST FOR ADDITIONAL INFORMATION (RAI) FOR

LICENSE AMENDMENT REQUEST RE: EXTENDED POWER UPRATE

REACTOR SYSTEMS REVIEW

NINE MILE POINT NUCLEAR STATION, LLC

NINE MILE POINT NUCLEAR STATION, UNIT NO. 2

DOCKET NO. 50-410

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Based on its review of the LAR and the supplemental information provided by the NMPNS in letters dated February 19, 2010 (ML100550599), June 3, 2010 (ML101610168), and July 30, 2010 (ML102170184), the NRC staff has determined that additional information requested below will be needed to support its review.

In its letter dated June 3, 2010, the licensee stated that,

> General Electric/Global Nuclear Fuel (GE/GNF) performed the depletion and criticality analyses in 2004 as reflected in Section 2.8.6 of NEDC-33351P, Attachment 11 of the May 27, 2009 License Amendment Request.

In its letter dated July 30, 2010, the licensee stated that,

> However, the GEH criticality evaluation is not part of the current licensing basis for the NMP2 spent fuel pool. The Holtec criticality analysis referenced in Section 9.1.2 of the NMP2 Updated Safety Analysis Report (USAR) is the current analysis of record. The Holtec criticality analysis was retained as the analysis of record, because, at the transition to GE14 fuel, the Holtec criticality analysis already addressed GE14 fuel types (as well as earlier fuel types utilized at NMPNS, which were shown to be bounded by GE14 fuel).

In an email dated September 16, 2010 (ML103050187), the licensee indicated that, NMP2 has never submitted a criticality analysis to the NRC staff for review.

Based on above, the NRC staff is unable to make a reasonable assurance finding for regulatory compliance, since the NRC staff has not reviewed the licensee's analysis of record. The NRC staff review of an EPU application per Review Standard (RS)-001 assumes that an acceptable starting point (i.e., an analysis of record) is available. The licensee submitted its latest USAR update by letter dated October 27, 2008 (ML083080129). The USAR reflects the Holtec analysis and states that,

> The criticality analysis for GE6/6B, GE9B, GE11, GE13, and GE14 fuel limits the maximum average planar enrichment to 5.0 w/o [weight percent] U-235 and the in-core K_∞ [K-infinity] ≤1.32, or a maximum average planar enrichment of 5.0 w/o U-235, as long as there is a minimum of 6 Gd_2O_3 [gadolinium oxide] rods at a minimum of 4.2 w/o Gd_2O_3.

The NRC staff understands that NMPNS intends to retain this technical basis following EPU implementation. The NRC staff has not reviewed this information. Therefore, to allow the NRC staff to continue its review, provide the Holtec analysis report that forms the licensee's analysis of record. In addition, provide the quantitative information that shows that the most limiting GE14 lattice design analyzed for the EPU submittal bounds all fuel stored at NMP2. This information may include the comparisons of keff vs. burnup curves for the applicable lattice designs and the actual burnup values for the fuel bundles stored at NMP2. The NRC staff needs this information to make a reasonable assurance determination that NMP2 fuel storage racks complies with NMP2 Technical Specification Section 4.3, "Fuel Storage".

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Sincerely,

/RA/

Richard V. Guzman, Senior Project Manager
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