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June 18, 2014

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Nine Mile Point Nuclear Station, Units 1 and 2  
Renewed Facility Operating License Nos. DPR-63 and NPF-69  
Docket Nos. 50-220 and 50-410

**Subject:** Application to Revise Technical Specifications to Adopt TSTF-535, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs" – Response to Request for Additional Information

- References:**
- (1) Letter from C. Costanzo (NMPNS) to Document Control Desk (NRC), dated October 7, 2013, Application to Revise Technical Specifications to Adopt TSTF-535, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs"
  - (2) Email from B. Vaidya (NRC) to B. Varga (NMPNS), dated May 19, 2014, Request for Additional Information, MF2927 & MF2928, Nine Mile Point Nuclear Station Unit Nos. 1 and 2, LAR to Adopt TSTF-535, Rev. 0 Using CLIP Process

Nine Mile Point Nuclear Station, LLC (NMPNS) hereby transmits supplemental information requested by the NRC staff in support of a previously submitted request for an amendment to Nine Mile Point Unit 1 (NMP1) Renewed Operating License DPR-63 and Nine Mile Point Unit 2 (NMP2) Renewed Operating License NPF-69. The initial request, dated October 7, 2013 (Reference 1), proposed the adoption of TSTF-535, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs"

The supplemental information, provided in the Attachment to this letter, responds to the request for additional information (RAI) documented in an email from B. Vaidya (NRC) to B. Varga (NMPNS) dated May 19, 2014 (Reference 2). As indicated in the email, the NRC requested that the RAI responses be submitted no later than 30 days following receipt of the email.

The supplemental information contained in this letter does not affect the No Significant Hazards Consideration Determination analysis provided by NMPNS in Reference (1). Pursuant to 10 CFR 50.91(b)(1), NMPNS is also providing a copy of this supplemental information to the appropriate state representative.

There are no regulatory commitments contained in this letter.

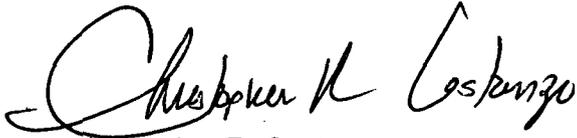
Should you have any questions regarding the information in this submittal, please contact Everett (Chip) Perkins, Director - Licensing, at (315) 349-5219.

ADD  
NRC

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I declare under penalty of perjury that the foregoing is true and correct. Executed on the 18<sup>th</sup> of June 2014.

Sincerely,

A handwritten signature in black ink that reads "Christopher R. Costanzo". The signature is written in a cursive style with a large initial "C" and "R".

Christopher R. Costanzo  
Site Vice President, Nine Mile Point Nuclear Station

CRC/BTV

Attachment: Response to Request for Additional Information

cc: Regional Administrator, Region I, USNRC  
Project Manager, USNRC  
Resident Inspector, USNRC  
A. L. Peterson, NYSERDA

**ATTACHMENT**

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**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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**ATTACHMENT  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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By letter dated October 7, 2013, Nine Mile Point Nuclear Station, LLC (NMPNS) requested an amendment for Nine Mile Point Units 1 and 2. The request proposed the adoption of TSTF-535, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs." This attachment provides supplemental information in response to the request for additional information (RAI) documented in the NRC's email dated May 19, 2014.

The discussion and RAI contained in the NRC's May 19<sup>th</sup>, 2014 email is repeated below (in italics), followed by the NMPNS response.

**Discussion and Request for Additional Information:**

*TSTF-535, as well as the model SE, provide a specific detail on applicable regulatory requirements and guidance, including a discussion on the 10 CFR 50, Appendix A, General Design Criteria (GDC). The SE particularly points out to the requirements of GDC 26, "Reactivity control system redundancy and capability," and GDC 27, "Combined reactivity control systems capability," respectively, which require that reactivity within the core be controllable to ensure subcriticality is achievable and maintainable under cold conditions, with appropriate margin for stuck rods; and that reactivity within the core be controllable to assure that under postulated accident conditions and with appropriate margin for stuck rods the capability to cool the core is maintained.*

*After Traveler TSTF-535 was submitted for review, concerns were identified regarding the applicability of approved travelers to plants that were licensed before the promulgation of the GDC. To resolve this issue, the Technical Specifications Task Force and the NRC agreed that plants licensed before the promulgation of the GDC are to address their plant-specific licensing basis in the license amendment request to adopt approved travelers that included the GDC as part of the basis for accepting the change, as stated by letter dated July 4, 2012 (ADAMS Accession No. ML12187A184). Accordingly, language similar to item 2 in the letter, should have been included in the NMP1's license amendment request to adopt TSTF-535.*

*NMPNS's application states the following:*

*"The traveler and model safety evaluation discuss the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). NMP1 was not licensed to the 10 CFR 50, Appendix A GDC, while NMP2 was licensed to the GDC. The NMP1 Updated Final Safety Analysis Report (UFSAR) provides an assessment against the GDC in Table I-1. This UFSAR table refers to the NMP1 Technical Supplement to Petition for Conversion from Provisional Operating License to Full-Term Operating License, July 1972, for the details of the assessment against the GDC current at that time. A review has determined that the plant-specific requirements for NMP1 are sufficiently similar to the Appendix A GDC as related to the proposed change."*

*Request For Additional Information:*

*The Staff's review of the NMPNS UFSAR Table I-1 determined that this one page Table merely points to certain historical files. The Table does not provide adequate plant-specific licensing basis comparison to those specific General Design Criteria discussed above. Please explain how your plant licensing basis compares to the GDC discussed above, and how it demonstrates an adequate technical basis for adopting TSTF-535.*

**ATTACHMENT**  
**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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**NMPNS Response:**

The Technical Supplement to Petition for Conversion from Provisional Operating License to Full-Term Operating License, July 1972, provided an analysis of plant design criteria for Nine Mile Point Unit No. 1 to the GDC criteria. The following is an excerpt from the Technical Supplement containing the analysis provided for GDC criterion 26 and 27:

**“Criterion 26 - Reactivity Control System Redundancy and Capability**

The Station contains a control rod system and a liquid-poison system for the control of reactivity. These systems are based on different design principles and are independent. The control rod system, in conjunction with the use of burnable poison in the fuel and reactor coolant recirculation system flow control, has the capability of controlling reactivity changes resulting from load changes, long-term reactivity changes, xenon burnout and fuel burnup. Reactor shutdown by the control rod system, in conjunction with the reactor protection system, is sufficiently rapid to prevent fuel damage limits from being exceeded during any anticipated operational transients. The control rod system is designed with a positive means of insertion and is capable of maintaining the reactor subcritical under hot or cold conditions with the highest worth control rod in the fully withdrawn position. The liquid poison system is capable of bringing and maintaining the reactor core subcritical either in its hot or in its most reactive condition (cold, xenon-free) independent of the control rod system. The control rod system is described in the FSAR. The liquid poison system is described in the same document.

**Criterion 27 - Combined Reactivity Control Systems Capability**

As stated in the FSAR Volume I, Section VII, the liquid poison system is provided to bring the reactor to a cold shutdown condition at any time in core life independent of the control rod system capabilities. The most severe requirement imposed on the liquid poison system is to shut down the reactor from a full-power operating condition, assuming complete failure of the withdrawn control rods to respond to an insertion signal. The rate of negative reactivity insertion provided by the liquid poison system is designed to exceed the rate of reactivity gain associated with reactor cool down from the full power condition. The liquid poison and the emergency core cooling systems are separate and independent systems. However, when operated simultaneously they accomplish the dual function under postulated accident conditions of both controlling reactivity changes with appropriate margin for stuck rods and maintaining adequate core cooling.”

Based on the analysis performed in the Technical Supplement, NMPNS believes that the plant-specific requirements for NMP1 are sufficiently similar to the Appendix A GDC and represent an adequate technical basis for adopting TSTF-535.