

May 7, 2004

Mr. James A. Spina  
Vice President Nine Mile Point  
Nine Mile Point Nuclear Station, LLC  
P.O. Box 63  
Lycoming, NY 13093

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT NO. 2 - ISSUANCE OF  
AMENDMENT RE: ULTIMATE HEAT SINK TEMPERATURE LIMIT  
REQUIREMENTS (TAC NO. MC0594)

Dear Mr. Spina:

The Commission has issued the enclosed Amendment No. 113 to Facility Operating License No. NPF-69 for the Nine Mile Point Nuclear Station, Unit 2 (NMP2). The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated August 22, 2003, as supplemented by letters dated January 12 and March 11, 2004.

The amendment revises Section 3.7.1, "Service Water (SW) System and Ultimate Heat Sink (UHS)," by adding a new Condition G to allow continued operation with short-term elevated UHS temperatures. The proposed amendment is based on Technical Specification Task Force Traveler-330, "Allowed Outage Time - Ultimate Heat Sink," Revision 3, dated October 6, 2000.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

*/RA/*

Peter S. Tam, Senior Project Manager, Section I  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-410

Enclosures: 1. Amendment No.       to NPF-69  
              2. Safety Evaluation

cc w/encls: See next page

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NINE MILE POINT NUCLEAR STATION, LLC (NMPNS)

LONG ISLAND LIGHTING COMPANY

DOCKET NO. 50-410

NINE MILE POINT NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 113  
License No. NPF-69

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Nine Mile Point Nuclear Station, LLC (the licensee) dated August 22, 2003, as supplemented by letters dated January 12 and March 11, 2004, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter 1;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-69 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 113 are hereby incorporated into this license. Nine Mile Point Nuclear Station, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Richard J. Laufer, Chief, Section I  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 7, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 113

TO FACILITY OPERATING LICENSE NO. NPF-69

DOCKET NO. 50-410

Replace the following page of Appendix A, Technical Specifications, with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page

Insert Page

3.7.1-2

3.7.1-2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 113 TO FACILITY OPERATING LICENSE NO. NPF-69  
NINE MILE POINT NUCLEAR STATION, LLC (NMPNS)  
NINE MILE POINT NUCLEAR STATION, UNIT 2  
DOCKET NO. 50-410

1.0 INTRODUCTION

By letter dated August 22, 2003 (ML032471646), as supplemented by letters dated January 12 and March 11, 2004 (ML040210776 and ML040830605, respectively), Nine Mile Point Nuclear Station, LLC (NMPNS or the licensee) submitted an application for amendment to revise the Technical Specifications (TSs) for Nine Mile Point Nuclear Station, Unit No. 2 (NMP2). The proposed amendment would revise TS Section 3.7.1, "Service Water (SW) System and Ultimate Heat Sink (UHS)," by adding a new Condition G to allow continued operation with short-term elevated UHS temperatures. The proposed amendment is based on Technical Specification Task Force Traveler (TSTF)-330, "Allowed Outage Time - Ultimate Heat Sink," Revision 3, dated October 6, 2000 (ML003758809).

The supplements dated January 12 and March 11, 2004, provided additional information that clarified the August 22, 2003, application, did not expand the scope of the application as originally noticed, and did not change the Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on September 30, 2003 (68 FR 56344).

1.1 Background

The licensee proposed to revise TS Section 3.7.1 to add new actions when UHS temperature exceeds the current TS temperature limit. A new TS condition would be entered when the water temperature of one or both service water system supply headers (the temperature measurement points for the UHS) is  $>82$  °F and  $\leq 84$  °F. If the condition is entered, verify once per hour that the water temperature of the SW supply headers is  $\leq 82$  °F averaged over the previous 24-hour period. Additionally, a fifth SW pump is to be placed in operation within 1 hour.

The NMP2 SW system is a once-through system that supplies water from Lake Ontario to various essential and non-essential components, as required, during normal plant operation and shutdown conditions. The SW system is designed with suitable redundancy to provide a reliable source of cooling water for the removal of residual heat from the following components:

### Safety-related components

1. Residual heat removal (RHR) heat exchangers
2. Emergency diesel generators
3. Control building area coolers and chillers
4. RHR pump seal coolers
5. Hydrogen recombiners
6. Safety-related area coolers
7. Spent fuel pool heat exchangers

### Non-Safety Related Components

1. Main condenser steam jet air ejector system pre-coolers
2. Turbine building closed loop cooling system heat exchangers
3. Reactor building closed loop cooling system heat exchangers
4. Turbine building area coolers and chillers
5. Reactor building normal air supply cooler

The SW system consists of the UHS, two essential cooling water headers (Loops A and B), and their associated pumps, piping, valves, and instrumentation. Any three SW pumps will provide sufficient cooling capacity to support the required essential components following the limiting loss-of-coolant accident (LOCA). Loops A and B are configured to provide cooling water to essential equipment in Divisions 1 and 2, respectively. In addition to the SW system, the UHS supplies cooling and process fluid for the fire protection water system pumps. The fire protection water system consists of one electric main fire pump, one diesel engine-driven main fire pump, two pressure maintenance pumps with associated fire mains, hydrants, standpipes, hose stations, sprinklers, water spray and deluge systems.

The UHS system consists of Lake Ontario (the UHS) and the SW intake and discharge systems. The UHS is capable of providing sufficient cooling to meet all of the SW system post-LOCA cooling requirements for a 30-day period.

## 2.0 REGULATORY EVALUATION

The NRC staff finds that the licensee in Section 1.0 of its August 22, 2003, submittal identified the applicable regulatory requirements. The regulatory requirements for which the NRC staff based its acceptance are described below.

Licensees have historically experienced elevated UHS temperature conditions during prolonged periods of hot, dry weather and on occasion, TS temperature limits have been exceeded. Typically, these situations are infrequent, of short duration, and do not pose a challenge to accident mitigating systems and components. Unfortunately, when these conditions arise, prompt action is required by licensees to address TS requirements which typically includes a request for the NRC to exercise enforcement discretion. The Nuclear Energy Institute's TSTF proposed a change to the Standard Technical Specification (STS) requirements in order to deal more efficiently with short-lived elevated UHS temperatures that exceed accident analysis assumptions. The proposed STS change was submitted as TSTF-330, "Allowed Outage Time-Ultimate Heat Sink," and Revision 3 of the TSTF was approved by the NRC for use by licensees on October 16, 2000.

TSTF-330 allows licensees to adopt an averaging approach for satisfying the UHS temperature limit as long as certain criteria are met. During periods when the temperature of the UHS exceeds the current TS limit, continued operation is allowed provided that: (a) the licensee confirms on an hourly basis that the rolling 24-hour average UHS temperature does not exceed this temperature limit, and (b) the UHS temperature does not exceed a new peak temperature limit that is established based on equipment limitations. TSTF-330 is not applicable for all situations, and licensees who wish to adopt this change to the STS must either confirm that the following conditions are satisfied, or provide justification for any exceptions that are identified:

- The UHS is not relied upon for immediate heat removal (such as to prevent containment overpressurization), but is relied upon for longer-term cooling such that the temperature averaging approach continues to satisfy the accident analysis assumptions for heat removal over time.
- When the UHS is at the peak temperature that is proposed pursuant to TSTF-330, equipment that is relied upon for accident mitigation, anticipated operational occurrences, or for safe shutdown, will not be adversely affected and are not placed in alarm condition or limited in any way at this higher temperature.
- Plant-specific assumptions, such as those that were credited in addressing station blackout and Generic Letter (GL) 96-06, have been adjusted (as necessary) to be consistent with the peak UHS temperature that is proposed pursuant to TSTF-330.
- Cooling water that is being discharged from the plant (either during normal plant operation, or during accident conditions) does not affect the UHS intake water temperature (typical of an infinite heat sink, but the location of the intake and discharge connections, and characteristics of the UHS can have an impact).

The NRC staff's acceptance of the proposed changes to NMP2 TS Section 3.7.1 will be based on whether the proposed changes are consistent with the conditions in TSTF-330 as described above.

### 3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of its proposed license amendment, which would revise TS Section 3.7.1, "Service Water (SW) System and Ultimate Heat Sink (UHS)." The NRC staff's detailed evaluation of the licensee's request is described in this section.

#### 3.1 New Condition G

The licensee proposed to revise this section by adding a new Condition G to include requirements for adopting the UHS temperature averaging approach as allowed by TSTF-330. The licensee proposes to establish 84 °F as the peak UHS temperature that can be allowed and has confirmed that the conditions required by TSTF-330, Revision 3, are satisfied. The proposed 84 °F limit is for analytical purposes, the operating UHS temperature limit will be less due to instrument uncertainties. The licensee's judgement was based in part on the following considerations:



- The UHS is not relied upon for immediate heat removal following a design-basis accident. The immediate heat removal capability is provided by the suppression pool whose initial temperature is independent of the UHS. The RHR system is used to maintain the suppression pool temperature within the TS limit. The TS limit for suppression pool temperature is not being changed, so the accident analysis initial conditions are not affected. With the exception of the Control Building (CB) chillers, existing margins offset the impact of the proposed increase in maximum UHS temperature to 84 °F. For the CB chillers, operation of a fifth SW pump is included as a TS Required Action to ensure that CB design basis temperatures can be met for all operating and postulated accident conditions at a UHS temperature of 84 °F. Condition 1 of TSTF-330 is satisfied since the immediate heat removal requirements and accident analysis assumptions are unaffected by an allowable maximum UHS temperature of 84 °F.
- With the exception of the RHR system heat exchangers, when the UHS is at 84 °F, equipment that is relied upon for accident mitigation, anticipated operational occurrences, or for safe shutdown will not be adversely affected and are not placed in alarm condition or limited in any way at this higher temperature. Following a main steam line isolation transient from 100% power coincident with a loss of offsite power, assuming a UHS temperature of 84 °F, the suppression pool temperature will exceed the current design limit by 1 °F. This analysis also assumes design-basis fouling and 5% tube plugging in the RHR heat exchangers. As a result, in its January 12 and March 11, 2004, letters, the licensee states that it will prevent the suppression pool from exceeding the current design limit by limiting the allowed percentage of tubes which may be plugged in the RHR heat exchanger. A 2% reduction in allowed tube plugging is equivalent to approximately a 2.6 °F reduction in the calculated peak suppression pool temperature. The tube plugging limit will be administratively controlled. Condition 2 of TSTF-330 is satisfied since the equipment that is relied upon for accident mitigation, anticipated operational occurrences, or for safe shutdown, will not be adversely affected and are not placed in alarm condition or limited in any way at an allowable maximum UHS temperature of 84 °F.
- Evaluations previously performed, in response to GL 96-06 to demonstrate that primary containment integrity would not be compromised by cooling water systems susceptible to waterhammer, two-phase flow, or overpressurization following a design-basis accident, are not impacted by the proposed UHS temperature limit increase. The licensee determined that the existing evaluations are bounding for the proposed increase in UHS temperature. In addition, the licensee performed evaluations which showed that the plant-specific assumptions, such as those that were credited in addressing station blackout and fire protection (10 CFR Part 50, Appendix R), in addition to GL 96-06, are not adversely affected by the proposed maximum UHS temperature of 84 °F. Condition 3 of TSTF-330 is satisfied since plant-specific assumptions, such as those that were credited in addressing station blackout and GL 96-06, are not adversely affected by the increase in the peak UHS temperature.
- Cooling water that is being discharged from the plant (either during normal plant operation, or during accident conditions) does not affect the UHS intake water temperature. The UHS for NMP2 is large (Lake Ontario) and there is a large separation between the intake and discharge. Therefore, the discharge will have an insignificant

impact on the intake temperature. In addition, the proposed increase in the UHS will keep the discharge temperature within the limit in the State Pollutant Discharge Elimination System permit. Condition 4 of TSTF-330 is satisfied since the cooling water that is being discharged from the plant does not affect the UHS intake water temperature.

### 3.2 Current Condition G

The licensee proposed to editorially revise Condition G, renaming it as Condition H due to the insertion of the new Condition G discussed above.

This Condition imposes requirements when required actions for Conditions A, B, C, D, E, or F are not met; the licensee proposed to add the new Condition G to this list.

These changes are editorial, and are acceptable to the NRC staff.

### 3.3 Associated TS Bases

The licensee provided a draft of a future revision of Page B 3.7.1-7 of the NMP2 TS Bases document, reflecting the addition of the new Condition G, for NRC staff information. The TS Bases document is a licensee-controlled document, which is not part of the NMP2 TS. The NRC staff has no comments on the draft revision.

### 3.4 Summary of Technical Evaluation

On the basis of the above regulatory and technical evaluations of the licensee's justifications for the proposed TS changes, the NRC staff concludes that the criteria for adopting the temperature averaging TS requirements for the UHS as allowed by TSTF-330, Revision 3, are satisfied for NMP2. The proposed TS requirements are consistent with the standard that was established by TSTF-330 and approved by the NRC.

## 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (68 FR 56344). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

## 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: D. C. Cullison

Date: May 7, 2004

Nine Mile Point Nuclear Station, Unit No. 2

cc:

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