December 14, 2006

Mr. Timothy J. O'Connor
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: STANDBY LIQUID CONTROL SYSTEM PUMP MINIMUM DISCHARGE PRESSURE (TAC NO. MD1859)

Dear Mr. O'Connor:

The Commission has issued the enclosed Amendment No. 117 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 (TSs) in response to your application transmitted by letter dated May 11, 2006.

The amendment revises NMP2 TS 3.1.7, "Standby Liquid Control (SLC) System," (SLCS) by increasing the minimum required NMP2 SLCS pump test discharge pressure specified in Surveillance Requirement 3.1.7.7 from 1235 psig to 1320 psig.

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/

Timothy G. Colburn, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-410

Enclosures:
1. Amendment No. 117 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. 117
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 May 11, 2006, 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. 117 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
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and Technical Specifications

Date of Issuance: December 14, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 117

TO FACILITY OPERATING LICENSE NO. NPF-69

DOCKET NO. 50-410

Replace the following page of the Facility Operating License 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
4	4

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

Remove Page	Insert Page
3.1.7.3	3.7.1.3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 117 TO FACILITY OPERATING LICENSE NO. NPF-69

NINE MILE POINT NUCLEAR STATION, LLC (NMPNS)

NINE MILE POINT NUCLEAR STATION, UNIT 2 (NMP2)

DOCKET NO. 50-410

1.0 INTRODUCTION

By letter dated May 11, 2006 (Reference 1) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML061380551), NMPNS (the licensee) submitted a request for changes to the NMP2 Technical Specifications (TSs). The requested changes would change TS Surveillance Requirement (SR) 3.1.7.7, related to standby liquid control system (SLCS) pump discharge pressure. The proposed amendment would increase the SLCS test discharge pressure from 1235 psig to 1320 psig. The amendment is requested to address concerns identified in Nuclear Regulatory Commission (NRC) Information Notice (IN) 2001-13: "Inadequate Standby Liquid Control System Relief Valve Margin" (Reference 2).

2.0 REGULATORY EVALUATION

2.1 Applicable Regulatory Requirements

Appendix A to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR) provides the General Design Criteria (GDC) for Nuclear Power Plants (Reference 3). GDC 26 states:

> Two independent reactivity control systems of different design principles shall be provided. One of the systems shall use control rods, preferably including a positive means for inserting the rods, and shall be capable of reliably controlling reactivity changes to assure that under conditions of normal operation, including anticipated operational occurrences, and with appropriate margin for malfunctions such as stuck rods, specified acceptable fuel design limits are not exceeded. The second reactivity control system shall be capable of reliably controlling the rate of reactivity changes resulting from planned, normal power changes (including xenon burnout) to assure acceptable fuel design limits are not exceeded. One of the systems shall be capable of holding the reactor core subcritical under cold conditions.

For boiling-water reactors (BWRs), the provisions of 10 CFR 50.62 require that the second reactivity control system be the SLCS. Its function is, per the requirements, to inject into the reactor pressure vessel a borated water solution at a prescribed flow rate, concentration and boron-10 isotopic enrichment. The boron in the solution absorbs neutrons, thus providing

reactivity control to shut down the reactor in the event the control rods fail to insert into the core. 10 CFR 50.62 is known as the Anticipated Transients Without Scram (ATWS) Rule.

In response to potential non-conservatisms in pressure calculations related to SLCS discharge pressure during ATWS scenarios, the NRC issued Information Notice (IN) 2001-13. IN 2001-13 requested licensees to evaluate pressure margins on the SLCS and confirm to the NRC that the systems remained in compliance with NRC regulations.

Requirements for relief valves and their setpoints are promulgated in the American Society of Mechanical Engineers *Boiler and Pressure Vessel Code* (ASME Code), Section III, Article NC-7700 (Reference 4). These requirements are incorporated by reference into 10 CFR Part 50.

2.2 Summary of IN 2001-13

Prior to the 1984 implementation of the ATWS rule, the SLCS was classified by the General Electric Company as a "Special Capability System," designed with the ability to shut down the reactor and bring it to the cold shutdown condition independent of the control rods. The ATWS rule provided prescriptive requirements for the capability of the SLCS system as discussed above.

In order to comply with 10 CFR 50.62, licensees modified their SLCS, using guidance provided by General Electric in NEDE-31096-P, "Anticipated Transients Without Scram: Response to NRC ATWS Rule," which the NRC approved (Reference 5). Some of the modifications involved using two SLCS pumps, rather than one.

Due to operation of two pumps discharging into the SLCS injection line, head losses in the injection line increased. As SLCS pumps are positive displacement pumps and will inject to peak reactor pressure, the corresponding system change necessary to compensate for the increased head losses was an increase in the SLCS line pressure.

At Susquehanna Steam Electric Station (SSES), NRC inspectors identified a non-conservatism in the licensee's SLCS system calculations whereby, in the pressure-limiting ATWS scenario, the SLCS relief valves could lift, causing the borated water to recirculate through the SLCS to the pump suction rather than inject into the reactor vessel. This may result in a violation of the injection rate requirements of the ATWS rule (Reference 6).

As a result of the finding at SSES, the NRC issued IN 2001-13. The licensee determined that the concerns identified in IN 2001-13 were applicable to NMP2. The licensee's amendment request seeks to address the concerns identified by the NRC in IN 2001-13 for NMP2.

3.0 TECHNICAL EVALUATION

As discussed above, the SLCS is designed to inject into the reactor vessel enough sodium pentaborate solution to place the reactor in a cold shutdown condition in the event the control rods fail to insert into the core when shutdown is required. The system is composed of two trains, each having a positive displacement pump, a boron storage tank, and required piping and valves. The SLCS trains share a common injection header.

The licensee proposed to increase the SLCS test discharge pressure from 1235 psig to 1320 psig. To support the change, the following additional modifications to the SLCS relief valve setpoint and resulting margin between that setpoint and the SLCS pump discharge pressure were proposed:

	Current (psig)	**Proposed (psig)**
SLCS Test Discharge Pressure	1235	1320
SLCS Relief Valve Setpoint	1387	1394
System Design Pressure	1400	1400 (no change)
Discharge/Relief Valve Margin	67	74

In order to preserve as much of the previous margin between the SLCS pump discharge pressure and the relief valve setpoint pressure as possible, the licensee proposed to increase the SLCS relief valve setpoint pressure to 1394 psig. The proposed margin of 74 psig between the TS required discharge pressure and the relief valve setpoint includes 30 psig to accommodate for pressure fluctuations due to pump pulsation, and 42 psig to accommodate for set pressure tolerance, a value of 3 percent. Two psig remain for overall margin. Thus, the NRC staff agrees with the licensee's conclusion that the margin between the maximum expected pump discharge pressure of 1320 psig and the proposed relief valve setpoint of 1394 psig is adequate to prevent lifting of the relief valve if the SLCS pumps started in response to an ATWS event.

The NRC staff also considered the proposed TS change in concert with the proposed SLCS relief valve setpoint change, and whether allowing the increased discharge pressure could pose a challenge to the system design pressure based on the fact that the SLCS relief valve setpoint is 6 psig lower than the system design pressure. A review of Section III of the ASME Code, Article NC-7700, "Pressure Relief" indicates that the proposed change is in compliance with the Code requirements. Thus, the staff concludes that the TS change is in support of acceptable modifications. Therefore, the TS change is acceptable.

Although this proposed pump discharge pressure to relief valve margin value falls below the margin value of 75 psig recommended generically by General Electric, it falls within the 70 psig that the NRC staff has found acceptable for SLCS pressure margin in consideration of similar SLCS design changes (Reference 7). Therefore, the staff concludes that the proposed TS change is in support of a system modification that is acceptable, and the NRC staff finds the proposed TS change acceptable.

In consideration of the criteria and analysis discussed above, the NRC staff finds that the licensee's proposed change to the TS is acceptable. Thus, the licensee may implement the proposed revision to NMP2 TS 3.1.7. Specifically, the licensee may increase the minimum required SLCS pump test discharge pressure specified in SR 3.1.7.7 from 1235 psig to 1320 psig.

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 installation or 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 (71 FR 56192). 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.

7.0 REFERENCES

1. O'Connor, Timothy J., Constellation Energy, letter to U.S. Nuclear Regulatory Commission, "License Amendment Request Pursuant to 10 CFR 50.90: Revision to Standby Liquid Control Pump Discharge Pressure Surveillance Requirement - Technical Specification 3.1.7," May 11, 2006. ADAMS Accession No. ML061380551.

2. U.S. Nuclear Regulatory Commission, "Inadequate Standby Liquid Control System Relief Valve Margin," Information Notice 2001-13, August 10, 2001.

3. *U.S. Code of Federal Regulations*, "Domestic Licensing of Production and Utilization Facilities," Part 50, Chapter 1, Title 10, "Energy."

4. American Society of Mechanical Engineers, *Boiler and Pressure Vessel Code*, 1974 Edition, Section III, Subsection NC7700, "Pressure Relief," New York.

5. General Electric Company, "Anticipated Transients Without Scram: Response to NRC ATWS Rule," NEDE 31096-P, January 1986.

6. U.S. Nuclear Regulatory Commission, "Susquehanna Steam Electric Station NRC Inspection Report 05000387/2001-004, 05000388/2001-004," May 21, 2001.

7. U.S. Nuclear Regulatory Commission, “Safety Evaluation by the Office of Nuclear Reactor Regulation, General Electric Nuclear Energy Licensing Topical Report NEDC 32938-P, ‘Generic Guidelines for General Electric Boiling Water Reactor Thermal Power Optimization,’ ” September 25, 2002. ADAMS Accession No. ML022680598.

Principal Contributor: B. Parks

Date: December 14, 2006

Nine Mile Point Nuclear Station, Unit No. 2

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