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May 11, 2006

U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**ATTENTION:** Document Control Desk

**SUBJECT:** Nine Mile Point Nuclear Station  
Unit No. 2; Docket No. 50-410

License Amendment Request Pursuant to 10 CFR 50.90:  
Revision to Standby Liquid Control Pump Discharge Pressure  
Surveillance Requirement – Technical Specification 3.1.7

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC, (NMPNS) hereby requests an amendment to Nine Mile Point Unit 2 (NMP2) Operating License NPF-69. The proposed change to the Technical Specifications (TSs) contained herein would revise TS 3.1.7, "Standby Liquid Control (SLC) System," by increasing the minimum required SLC pump discharge pressure specified in Surveillance Requirement (SR) 3.1.7.7 from 1235 psig to 1320 psig.

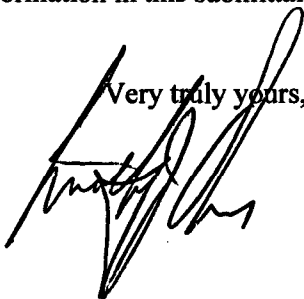
This change to the SLC pump discharge pressure surveillance requirement addresses a concern that was identified in NRC Information Notice 2001-13, "Inadequate Standby Liquid Control System Relief Valve Margin." The change to the TS surveillance requirement is consistent with the functional requirements of the anticipated transients without scram (ATWS) rule (10 CFR 50.62). The description and technical basis of the proposed change are contained in Attachment (1). The proposed Technical Specification changes are shown in the markup in Attachment (2).

NMPNS requests approval of this request by February 1, 2007, with implementation within 60 days of receipt of the approved amendment. The proposed change does not have any affect on current plant operations. The current TS surveillance requirement for the SLC pumps adequately demonstrates the capability of the SLC system to satisfy the ATWS rule requirements.

Pursuant to 10 CFR 50.91(b)(1), NMPNS has provided a copy of this license amendment request, with attachments, to the appropriate state representative.

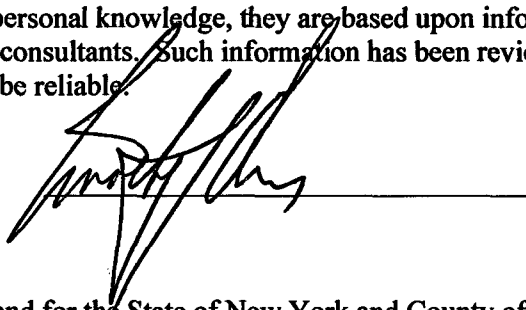
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Should you have any questions regarding the information in this submittal, please contact M. H. Miller, Licensing Director, at (315) 349-1510.


Very truly yours,  


STATE OF NEW YORK :  
: TO WIT:  
COUNTY OF OSWEGO :

I, Timothy J. O'Connor, begin duly sworn, state that I am Vice President Nine Mile Point, and that I am duly authorized to execute and file this request on behalf of Nine Mile Point Nuclear Station, LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Nine Mile Point employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.



Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 11<sup>th</sup> day of May, 2006.

WITNESS my Hand and Notarial Seal:  
**TONYA L. JONES**  
Notary Public in the State of New York  
Oswego County Reg. No. 01JO8083354  
My Commission Expires 11/12/2006  
  
Notary Public  
My Commission Expires: 5/11/2006  
Date

TJO/DEV/sac

- Attachments: (1) Technical Basis and No Significant Hazards Determination  
(2) Proposed Technical Specification Changes (Mark-up)

cc: S. J. Collins, NRC  
T. G. Colburn, NRC  
Resident Inspector, NRC  
J. P. Spath, NYSERDA

bcc: L. S. Larragoite  
C. W. Fleming, Esquire  
T. J. O'Connor  
J. A. Hutton  
M. H. Miller/T. F. Syrell  
J. L. Lyon  
T. Lee  
S. K. Dhar  
M. S. Conway

NMP2L 2127

**COMMITMENTS IDENTIFIED IN THIS CORRESPONDENCE:**

- Raise the standby liquid control (SLC) pump discharge relief valve set pressure to 1394 psig.  
**Responsible Person/Organization:** S. Dhar/Design Engineering  
**Due Date:** 60 days following NRC approval of the LAR  
**SAR/TSB Revision Required? If yes,** Yes  
**Type:** USAR – LDCR 2-04-UFS-039  
TS Bases – LDCR 2-04-OPL-005  
**Initiation Date:** USAR – 11/05/04  
TS Bases – 11/04/04  
**NCTS No.:** 504614-00  
(All necessary actions are identified in DCP N2-03-069)

**Posting Requirements for Responses – NOV/Order**

**No**

**ATTACHMENT (1)**

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**TECHNICAL BASIS AND  
NO SIGNIFICANT HAZARDS DETERMINATION**

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## ATTACHMENT (1)

### TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS DETERMINATION

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#### 1. DESCRIPTION

This letter is a request to amend Operating License NPF-69 for Nine Mile Point Unit 2 (NMP2). The proposed change would revise Technical Specification (TS) TS 3.1.7, "Standby Liquid Control (SLC) System," to change the minimum required SLC pump discharge pressure specified in Surveillance Requirement (SR) 3.1.7.7. This change has resulted from the Nine Mile Point Nuclear Station, LLC (NMPNS) review of NRC Information Notice 2001-13, "Inadequate Standby Liquid Control System Relief Valve Margin."

#### 2. PROPOSED CHANGE

TS SR 3.1.7.7 currently specifies the following for each SLC pump:

"Verify each pump develops a flow rate  $\geq 41.2$  gpm at a discharge pressure  $\geq 1235$  psig."

The proposed change revises SR 3.1.7.7 to increase the required SLC pump discharge pressure from 1235 psig to 1320 psig.

The proposed change to the TSs is indicated on the marked-up page provided in Attachment 2. Associated TS Bases changes will be processed in accordance with the NMP2 TS Bases Control Program (TS 5.5.10).

#### 3. BACKGROUND

The SLC system is described in Section 9.3.5 of the NMP2 Updated Safety Analysis Report (USAR). The system provides a backup capability for shutting down the reactor. The SLC system is needed only in the event that sufficient control rods cannot be inserted into the reactor core to accomplish shutdown and cooldown in the normal manner. To accomplish this function, the SLC system injects a sodium pentaborate solution into the reactor. The SLC system consists of a boron solution storage tank, two positive displacement pumps, two explosive valves (provided in parallel for redundancy), and associated *pipng and valves used to transfer borated water from the storage tank to the reactor pressure vessel (RPV)*. The borated water solution is discharged into the RPV through the high pressure core spray sparger.

As described in the Bases for TS 3.1.7, the SLC system satisfies the requirements of 10 CFR 50.62 for anticipated transients without scram (ATWS). The ATWS rule requires that each boiling water reactor must have a SLC system with the capability of injecting into the RPV (during anticipated operational occurrences) a borated water solution at such a flow rate, level of boron concentration and boron-10 isotope enrichment, and accounting for reactor pressure vessel volume, that the resulting reactivity control is at least equivalent to that resulting from injection of 86 gallons per minute of 13 weight percent sodium pentaborate decahydrate solution. For NMP2, this requirement is satisfied by the simultaneous operation of two SLC pumps, each with a capacity of 41.2 gpm, delivering water with a sodium pentaborate concentration of 13.57 weight percent (References 1 and 2).

Information Notice (IN) 2001-13 identified a concern that inadequate margin may exist between the SLC pump discharge line relief valve set pressure and the maximum expected pump discharge pressure during certain ATWS events. Lifting of the relief valve during an ATWS transient would cause the sodium pentaborate solution to be recycled to the pump suction rather than injected into the RPV, thereby

## ATTACHMENT (1)

### TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS DETERMINATION

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preventing the SLC system from meeting the equivalent flow capacity required by the ATWS rule. The proposed change to NMP2 TS SR 3.1.7.7 is a result of the NMPNS review and resolution of the concern identified IN 2001-13.

#### 4. TECHNICAL ANALYSIS

The NMPNS review of IN 2001-13 determined that the concern described in the information notice was applicable to NMP2. The most recent ATWS analyses performed for NMP2, for power uprate conditions (License Amendment No. 66), show that the maximum expected pressure in the RPV at the time when the SLC system would begin to inject is 1215 psig (for the Loss of Offsite Power transient). Accounting for static head and hydraulic losses in the SLC pump discharge lines, the maximum pressure at the SLC pump discharge would be 1320 psig. This is 85 psi higher than the value of 1235 psig that is currently specified in TS SR 3.1.7.7. The hydraulic losses were conservatively calculated assuming operation of both SLC pumps at a total flow rate of 86 gpm (43 gpm per pump), which exceeds the TS-required flow rate of 41.2 gpm per pump. Since these hydraulic losses are greater than the losses for one-pump operation, they are conservative and acceptable for use in establishing the pump discharge pressure surveillance requirement. The proposed change revises SR 3.1.7.7 to increase the required SLC pump discharge pressure from 1235 psig to 1320 psig to be consistent with the worst case ATWS transient condition.

The current SLC pump discharge relief valve nominal set pressure is 1387 psig, which is 67 psi above the maximum expected pump discharge pressure of 1320 psig. To preserve margin between the SLC pump discharge relief valve set pressure and the maximum SLC pump discharge pressure, the relief valve minimum nominal set pressure will be raised to 1394 psig. This provides a margin of 74 psi between the maximum expected pump discharge pressure and the relief valve set pressure. This 74 psi margin accommodates SLC pump pulsation (30 psi), a three percent set pressure tolerance (42 psi), and a 2 psi margin, in accordance with General Electric recommendations and industry practice. No other changes to the SLC system design are necessary. The new relief valve set pressure of 1394 psig will maintain system pressure less than the design pressure of 1400 psig after accounting for static backpressure, as allowed by the American Society of Mechanical Engineers (ASME) Code, Section III. Design limits for the SLC pump discharge piping will not be exceeded for operation at a SLC pump discharge pressure of 1320 psig.

NMP2 has been and continues to be in compliance with the ATWS rule requirements. The SLC pumps are positive-displacement pumps that are designed to deliver the required flow rate at the design pressure of 1400 psig. Since the discharge pressure has no appreciable influence on the flow rate of these positive-displacement pumps, performance of TS SR 3.1.7.7 at the currently specified pump discharge pressure of 1235 psig adequately demonstrates the capability of the SLC pumps to deliver the required 41.2 gpm flow rate at a discharge pressure of 1320 psig. In addition, the SLC pump discharge relief valves (2SLS\*RV2A and B) are currently set at 1385 psig and 1380 psig, respectively, and a review of work order history for these relief valves indicated that actual set pressure drift has been less than 0.5 percent of the nominal set pressure. Thus, the margin between the maximum expected pump discharge pressure of 1320 psig and the current relief valve set pressures is adequate to prevent lifting of the relief valves if the SLC pumps started in response to an ATWS event.

In conclusion, the proposed change to TS SR 3.1.7.7 is consistent with the functional requirements of 10 CFR 50.62. The SLC system will continue to provide the function of reactivity control independent of the control rod system following implementation of the proposed TS changes.

## ATTACHMENT (1)

### TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS DETERMINATION

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#### 5. NO SIGNIFICANT HAZARDS DETERMINATION

Nine Mile Point Nuclear Station, LLC (NMPNS) is requesting a revision to Facility Operating License No. NPF-69 for Nine Mile Point Unit 2 (NMP2). The proposed change would revise the Technical Specification (TS) surveillance requirements for the Standby Liquid Control (SLC) system by increasing the SLC pump discharge pressure at which the required flow rate must be verified. This change is consistent with the functional requirements of the anticipated transients without scram (ATWS) rule (10 CFR 50.62).

NMPNS has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change revises the surveillance requirements for the SLC system to correspond to the maximum expected pressure in the reactor pressure vessel for an ATWS event. This proposed increase in the specified SLC pump discharge pressure involves only the SLC system. No other NMP2 structures, systems, or components are affected. The SLC system is provided to mitigate ATWS events and, as such, is not considered to be an initiator of an ATWS event or any other analyzed accident. The revised TS surveillance requirement, and the associated change to the SLC pump discharge relief valve set pressure (not described in the TS), neither reduce the ability of the SLC system to respond to and mitigate an ATWS event nor increase the likelihood of a system malfunction that could increase the consequences of an accident. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change to the SLC pump TS surveillance requirement, and the associated change to the SLC pump discharge relief valve set pressure (not described in the TS), are consistent with the functional requirements of the ATWS rule (10 CFR 50.62). The proposed change does not involve the installation of any new or different type of equipment, does not introduce any new modes of plant operation, and does not change any methods governing normal plant operation. The proposed change does not introduce any new accident initiators, and therefore does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed change does not alter any assumptions, initial conditions, or results of any accident analyses. The proposed change to the SLC pump TS surveillance requirement, and the associated change to the SLC pump discharge relief valve set pressure (not described in the TS), are

**ATTACHMENT (1)**

**TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS DETERMINATION**

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consistent with the functional requirements of the ATWS rule (10 CFR 50.62). The ability of the SLC system to respond to and mitigate an ATWS event is not affected. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, NMPNS concludes that the proposed amendment presents no significant hazards considerations under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

**6. ENVIRONMENTAL ASSESSMENT**

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

**7. PRECEDENT**

The NRC has previously approved similar TS changes for Susquehanna Steam Electric Station Units 1 and 2 by License Amendment Nos. 221 and 198 (TAC Nos. MC3305 and MC3306).

**8. REFERENCES**

1. Letter, Niagara Mohawk Power Corporation (C. V. Mangan) to NRC (E. G. Adensam) dated May 2, 1986 (NMP2L 0698)
2. NUREG-1047, Safety Evaluation Report Related to Operation of Nine Mile Point Nuclear Station, Unit No. 2, Supplement No. 4 dated September 1986, Section 15.8

**9. REGULATORY COMMITMENTS**

The following table identifies those actions committed to by NMPNS in this submittal. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

REGULATORY COMMITMENTS	DUE DATE
Raise the standby liquid control (SLC) system pump discharge relief valve set pressure to 1394 psig.	60 days following NRC approval of the license amendment request.



**ATTACHMENT (2)**

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**PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)**

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3.1.7-3

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
<p>SR 3.1.7.7</p> <p>Verify each pump develops a flow rate <math>\geq 41.2</math> gpm at a discharge pressure <math>\geq</math> <del>1235</del> psig.</p> <p style="margin-left: 40px;">1320</p>	<p>In accordance with the Inservice Testing Program</p>
<p>SR 3.1.7.8</p> <p>Verify flow through one SLC subsystem from pump into reactor pressure vessel.</p>	<p>24 months on a STAGGERED TEST BASIS</p>
<p>SR 3.1.7.9</p> <p>Verify all heat traced piping between storage tank and pump suction valve is unblocked.</p>	<p>24 months</p> <p><u>AND</u></p> <p>Once within 24 hours after piping temperature is restored to <math>\geq 70^{\circ}\text{F}</math></p>
<p>SR 3.1.7.10</p> <p>Verify sodium pentaborate enrichment is <math>\geq 25</math> atom percent B-10.</p>	<p>Prior to addition to SLC tank</p>

