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NINE MILE POINT
NUCLEAR STATION

October 7, 2013

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

**ATTENTION:** Document Control Desk

**SUBJECT:** 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

Application to Revise Technical Specifications to Adopt TSTF-535, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs"

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC (NMPNS) hereby requests amendments to Nine Mile Point Unit 1 (NMP1) Renewed Facility Operating License (OL) DPR-63 and Nine Mile Point Unit 2 (NMP2) Renewed OL NPF-69 to modify the Technical Specifications (TS) definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle. This change is needed to address new Boiling water Reactor (BWR) fuel designs which may be more reactive at shutdown temperatures above 68°F.

The Enclosure and its associated Attachments to this application provide the evaluation of the proposed changes to the NMP1 and NMP2 TSs. As indicated in the Enclosure, NMPNS concludes that the activities associated with the request involve no significant hazards consideration under the standards set forth in 10 CFR 50.92.

NMPNS requests approval of this application within one year of submittal. Once approved, the amendments shall be implemented within 60 days.

There are no new regulatory commitments in this letter.

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



A001
NRR

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

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 7, 2013.

Very truly yours,

Christopher R Costanzo

CRC/JJD

Enclosure: Description and Assessment

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

# ENCLOSURE

## DESCRIPTION AND ASSESSMENT

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**ATTACHMENTS**

## 1.0 DESCRIPTION

The proposed amendment modifies the Technical Specifications (TS) definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle. This change is needed to address new Boiling Water Reactor (BWR) fuel designs which may be more reactive at shutdown temperatures above 68°F.

## 2.0 ASSESSMENT

### 2.1 Applicability of Published Safety Evaluation

Nine Mile Point Nuclear Station, LLC (NMPNS) has reviewed the model safety evaluation dated February 19, 2013, as part of the Federal Register Notice of Availability (Reference 1). This review included a review of the NRC's evaluation, as well as the information provided in TSTF-535 (Reference 2). As described in the subsequent paragraphs, NMPNS has concluded that the justifications presented in the TSTF-535 proposal and the model safety evaluation prepared by the NRC are applicable to Nine Mile Point Unit 1 (NMP1) and Nine Mile Point Unit 2 (NMP2) and justify this amendment for the incorporation of the changes to the plant TS.

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.

### 2.2 Optional Changes and Variations

NMPNS is not proposing any significant variations or deviations from the TS changes described in TSTF-535, Revision 0, or the applicable parts of the NRC's model safety evaluation dated February 19, 2013.

NMPS is noting the following minor variations for the NMP1 TS: The NMP1 TS are custom TS, and therefore the current SDM definition format and numbering varies slightly from the NRC Standard Technical Specifications (STS) (NUREG-1433) shown in TSTF-535, Revision 0, and the applicable parts of the NRC's model safety evaluation. The minor variations are administrative and do not affect the applicability of TSTF-535 to the NMP1 TS.

There are no variations or deviations from the TS changes described in TSTF-535, Revision 0, for the NMP2 TS.

## 3.0 REGULATORY ANALYSIS

### 3.1 No Significant Hazards Consideration Determination

Nine Mile Point Nuclear Station LLC (NMPNS) requests the adoption of TSTF-535, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," which is an approved change to the standard technical specifications (STS), into the Nine Mile Point Unit 1 (NMP1) and Nine Mile Point Unit 2 (NMP2) Technical Specifications (TS). The proposed amendment modifies the TS definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle.

NMPNS has evaluated whether or not a significant hazards consideration is involved with the proposed amendments 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 definition of SDM. SDM is not an initiator to any accident previously evaluated. Accordingly, the proposed change to the definition of SDM has no effect on the probability of any accident previously evaluated. SDM is an assumption in the analysis of some previously evaluated accidents and inadequate SDM could lead to an increase in consequences for those accidents. However, the proposed change revises the SDM definition to ensure that the correct SDM is determined for all fuel types at all times during the fuel cycle. As a result, the proposed change does not adversely affect the consequences of any accident previously evaluated.

   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 revises the definition of SDM. The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The change does not alter assumptions made in the safety analysis regarding SDM.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

   Response: No.

The proposed change revises the definition of SDM. The proposed change does not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined. The proposed change ensures that the SDM assumed in determining safety limits, limiting safety system settings or limiting conditions for operation is correct for all fuel types at all times during the fuel cycle.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

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

## 3.2 Conclusions

In conclusion, based on the considerations discussed above, (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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

## 4.0 ENVIRONMENTAL CONSIDERATION

The proposed change 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 change does not involve: (i) a significant hazards consideration; (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change 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 change.

## 5.0 REFERENCES

1. Notice of Availability of the "Models for Plant-Specific Adoption of Technical Specifications Task Force Traveler TSTF-535, Revision 0, 'Revise Shutdown Margin definition to Address advanced Fuel Designs,' Using the Consolidated Line Item Improvement Process," dated February 26, 2013

2. TSTF-535-A, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," dated August 8, 2011

# ATTACHMENT 1

## NINE MILE POINT UNIT 1
## PROPOSED CHANGES TO TECHNICAL SPECIFICATIONS
## (MARK-UPS)

The current version of Technical Specification page 8 has been marked-up to reflect the proposed changes:

1.28 (Deleted)

1.29 (Deleted)

1.30 Reactor Coolant Leakage

a. Identified Leakage

(1) Leakage into closed systems, such as pump seal or valve packing leaks that are captured, flow metered and conducted to a sump or collecting tank, or

(2) Leakage into the primary containment atmosphere from sources that are both specifically located and known not to be from a through-wall crack in the piping within the reactor coolant pressure boundary.

b. Unidentified Leakage

All other leakage of reactor coolant into the primary containment area.

1.31 Core Operating Limits Report

The CORE OPERATING LIMITS REPORT is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.6.5. Plant operation within these operating limits is addressed in individual specifications.

1.32 Shutdown Margin (SDM)

SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical, assuming that:

a. The reactor is xenon free, throughout the operating cycle

b. The moderator temperature is ≥ 68° F, and

c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM. corresponding to the most reactive state,

# ATTACHMENT 2

## NINE MILE POINT UNIT 2
## PROPOSED CHANGES TO TECHNICAL SPECIFICATIONS
## (MARK-UPS)

The current version of Technical Specification page 1.1-6 has been marked-up to reflect the proposed changes:

1.1 Definitions (continued)

| | |
|---|---|
| SHUTDOWN MARGIN (SDM) | SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that:<br>a. The reactor is xenon free throughout the operating cycle;<br>b. The moderator temperature is ≥ 68°F; and<br>c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn corresponding to the most reactive state. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM. |
| STAGGERED TEST BASIS | A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function. |
| THERMAL POWER | THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant. |
| TURBINE BYPASS SYSTEM RESPONSE TIME | The TURBINE BYPASS SYSTEM RESPONSE TIME consists of two components:<br>a. The time from initial movement of the main turbine stop valve or control valve until 80% of the turbine bypass capacity is established; and<br>b. The time from initial movement of the main turbine stop valve or control valve until initial movement of the turbine bypass valve.<br>The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. |