

December 9, 2002

Mr. John T. Conway  
Site Vice President  
Nine Mile Point Nuclear Station, LLC  
P. O. Box 63  
Lycoming, NY 13093

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT NO. 1 - ISSUANCE OF  
AMENDMENT RE: USE OF THE ROD WORTH MINIMIZER  
(TAC NO. MB5453)

Dear Mr. Conway:

The Commission has issued the enclosed Amendment No. 178 to Facility Operating License No. DPR-63 for the Nine Mile Point Nuclear Station, Unit No. 1. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated July 12, 2002.

The amendment revises TSs Sections 3.1.1 and 4.1.1, "Control Rod System," by reducing the power level below which the rod worth minimizer or a second independent verification of rod position must be used from 20% to 10% rated thermal power.

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 1  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-220

Enclosures: 1. Amendment No. 178 to DPR-63  
2. Safety Evaluation

cc w/encls: See next page

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Accession Number: **ML023430193**

OFFICE	PDI-1\PM	PDI-1\LA	SRXB\SC*	OGC	PDI-1\SC	
NAME	PTam	SLittle	RCaruso	STurk	RLaufer	
DATE	11/14/02	11/14/02	11/20/02	11/25/02	12/3/02	

\*SE transmitted by memo on the date shown.

OFFICIAL RECORD COPY

DATED: December 9, 2002

AMENDMENT NO. 178 TO FACILITY OPERATING LICENSE NO. DPR-63 NINE MILE POINT  
UNIT NO. 1

PUBLIC  
PDI R/F  
RLaifer  
SLittle  
PTam  
SRichards  
OGC  
GHill (2)  
WBeckner  
THuang  
ACRS  
BPlatchek, RI

cc: Plant Service list

NINE MILE POINT NUCLEAR STATION, LLC (NMPNS)

DOCKET NO. 50-220

NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 178  
License No. DPR-63

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 July 12, 2002, 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 I;
  - 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. DPR-63 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, which is attached hereto, as revised through Amendment No. 178, is hereby incorporated into this license. Nine Mile Point Nuclear Station, LLC shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented prior to the start of Refueling Outage 17.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA by GVissing for/*

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: December 9, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 178

TO FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

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

Remove Page

32

Insert Page

32

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 178 TO FACILITY OPERATING LICENSE NO. DPR-63  
NINE MILE POINT NUCLEAR STATION, LLC  
NINE MILE POINT NUCLEAR STATION, UNIT NO. 1  
DOCKET NO. 50-220

## 1.0 INTRODUCTION

By letter dated July 12, 2002, Nine Mile Point Nuclear Station, LLC (the licensee) submitted an application for changes to the Nine Mile Point Nuclear Station, Unit No. 1 (NMP1), Technical Specifications (TSs). The proposed amendment would revise Sections 3.1.1 and 4.1.1, "Control Rod System," by reducing the power level below which the rod worth minimizer (RWM) or a second independent verification of rod position must be used from 20% to 10% rated thermal power (RTP). The RWM is a computer-controlled system designed to monitor and block, when necessary, operator control rod selection, withdrawal and insertion actions, and thus assist in preventing significant control rod pattern errors which could lead to a control rod with high reactivity worth.

## 2.0 REGULATORY EVALUATION

Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR 50.36) provides that nuclear plant TSs will be derived from the analyses and evaluations included in the safety analysis report, and amendments thereto, submitted pursuant to 10 CFR 50.34 (which addresses, among other things, contents of the Final Safety Analysis Report (FSAR)). The existing TS requirements, as well as the licensee's proposed amendment, are based on such analyses and evaluations. The licensee requested the subject amendment in accordance with 10 CFR 50.90.

## 3.0 TECHNICAL EVALUATION

### 3.1 Discussion of Proposed Change

The proposed amendment affects Limiting Condition for Operation (LCO) 3.1.1 and Surveillance Requirement (SR) 4.1.1. Specifically, the licensee proposed to change the power setpoint from 20% RTP to 10% in LCO 3.1.1.b.(3)(b) and in SR 4.1.1.b.(3)(b).

The licensee described that the 20% power limit for use of the RWM (or independent verification of rod positions) was instituted due to uncertainties in the calculational methods used to model the control rod drop accident (CRDA) in TS Amendment No. 16, dated June 27, 1977. Subsequently, Topical Report NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," Revision 8, Amendment No. 17, was submitted for Nuclear Regulatory Commission (NRC) review by the Boiling Water Reactor Owners Group on August 15, 1986,

and was approved by the NRC on December 27, 1987. The purpose of this document was to (1) eliminate the requirement for use of the rod sequence control system (RSCS) for those reactors having such a system, and (2) reduce the low-power setpoint of the RWM. NMP1 does not have an RSCS. Analyses described in the submittal for NEDE-24011-P-A, Amendment No. 17, show that at 10% RTP and greater, no control rod pattern can generate rod worths such that the fuel enthalpy would exceed the 280 cal/gram fuel enthalpy limit during the worst CRDA. The licensee also stated that the low-power setpoint change will reduce the time necessary for both reactor startup and shutdown. The results from analysis by Brookhaven National Laboratory for "zero" power CRDA events indicate very low peak enthalpies (less than about 130 cal/gm) for maximum rod worths (about 1.5% delta k) assuming no pattern errors, and less than 200 cal/gm for maximum rod worths (about 2.5% delta k) which might exist assuming maximum single error patterns.

As a result of a fuel failure during a test at the CABRI reactor in France, in 1993, and one in 1994 at the NSRR test reactor in Japan, the NRC recognized that high burnup fuel cladding might fail during a reactivity insertion accident (RIA), such as a CRDA, at lower enthalpies than the limits currently specified in Regulatory Guide (RG) 1.77. However, generic analyses performed by all of the reactor vendors have indicated that the fuel enthalpy during RIAs will be much lower than the RG 1.77 limits, based on their three-dimensional (3D) neutronics calculations. For high burnup fuel which has been burned so long that it no longer contains significant reactivity, the fuel enthalpies calculated using the 3D models are expected to be much lower than 100 cal/gm.

The NRC staff concluded that although the RG 1.77 limits may not be conservative for cladding failure, the analyses performed by the vendors, which have been confirmed by NRC-sponsored calculations, provide reasonable assurance that the effects of postulated RIAs in operating plants with fuel burnup up to 60 GWD/MTU will neither (1) result in damage to the reactor coolant pressure boundary, nor (2) sufficiently disturb the core, its support structure or other reactor pressure vessel internals to impair significantly the capability to cool the core as specified in current regulatory requirements.

### 3.2 Conclusion on Proposed Change

The NRC staff has reviewed the licensee's proposed change to the power setpoint from 20% to 10% RTP in LCO 3.1.1.b.(3)(b) and SR 4.1.1.b.(3)(b), and found that the licensee's proposed TS changes and associated Bases changes are acceptable because NRC-approved methodologies were used. Accordingly, the NRC staff is issuing a revised page 32 to the TSs to reflect this approval. The NRC staff expects the licensee to reprint pages 39, 41, and 43, which carry the associated Bases, to reflect this approval.

### 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, and changes



surveillance requirements. 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 (67 FR 50957). 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 staff 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: T. Huang

Date: December 9, 2002

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Unit No. 1

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