

October 12, 1990

Docket No. 50-410

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Mr. Lawrence Burkhardt III  
Executive Vice President, Nuclear Operations  
Niagara Mohawk Power Corporation  
301 Plainfield Road  
Syracuse, New York 13212

Dear Mr. Burkhardt:

SUBJECT: ISSUANCE OF AMENDMENT ON THE DESIGN FEATURES OF THE REACTOR CORE  
FOR NINE MILE UNIT 2 (TAC NO. 75278)

The Commission has issued the enclosed Amendment No. 23 to Facility Operating License No. NPF-69 for the Nine Mile Point Nuclear Station Unit No. 2 (NMP-2). The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated November 9, 1989, as superseded April 10, 1990.

This amendment revises Technical Specification Sections 5.3.1 and 5.3.2 on Design Features to replace the specific description of the design features of fuel assemblies and control rod assemblies by a more generic description. This amendment, in conjunction with Amendment No. 17 issued on June 19, 1990, addresses in its entirety the changes requested by the licensee in the April 10, 1990, application.

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

Sincerely,

ORIGINAL SIGNED BY:

Robert E. Martin, Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 23 to NPF-69
2. Safety Evaluation

cc: w/enclosures  
See next page

\*see previous concurrence

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CVogan  
10/4/90

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DOudinot  
10/5/90

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RMartin  
10/5/90

OGC  
MYoung\*  
09/11/90

*ROJ*  
SRXB  
RJones  
10/11/90

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DOCUMENT NAME: AMENDMENT 75278 REVISED

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PDI-1:LA  
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10/14/90

PDI-1:PE  
DOudinot  
10/15/90

PDI-1:PM  
RMartin  
10/15/90

OGC  
MYoung\*  
09/11/90

SRXB  
RJones  
10/11/90

B:PDI-1  
RACapra  
10/12/90

DOCUMENT NAME: AMENDMENT 75278 REVISED



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

October 12, 1990

Docket No. 50-410

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Executive Vice President, Nuclear Operations  
Niagara Mohawk Power Corporation  
301 Plainfield Road  
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Robert E. Martin, Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

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2. Safety Evaluation

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See next page

Mr. Lawrence Burkhardt III  
Niagara Mohawk Power Corporation

Nine Mile Point Nuclear Station  
Unit 2

cc:

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Superintendent  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-410

NINE MILE POINT NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 23  
License No. NPF-69

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Niagara Mohawk Power Corporation (the licensee) dated November 9, 1989, as superseded April 10, 1990, 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. 23 are hereby incorporated into this license. Niagara Mohawk Power Corporation 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 to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Robert A. Capra, Director  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 12, 1990

ATTACHMENT TO LICENSE AMENDMENT  
AMENDMENT NO. 23 TO FACILITY OPERATING LICENSE NO. NPF-69

DOCKET NO. 50-410

Revise Appendix A as follows:

Remove Page

5-7

Insert Page

5-7

## DESIGN FEATURES

### CONTAINMENT

#### SECONDARY CONTAINMENT

5.2.3 The secondary containment consists of the reactor building, and the north and south auxiliary bays and has a minimum free volume of 3,876,630 cubic feet.

#### 5.3 REACTOR CORE

##### FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 764 fuel assemblies. Each assembly consists of a matrix of Zircaloy clad fuel rods with an initial composition of slightly enriched uranium dioxide UO<sub>2</sub>. Fuel assemblies shall be limited to those fuel designs approved for use in BWR's.

##### CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 185 cruciform shaped control rod assemblies. The control material shall be boron carbide powder (B<sub>4</sub>C) and/or Hafnium metal. The control assembly shall have a nominal axial absorber length of 143 inches.

#### 5.4 REACTOR COOLANT SYSTEM

##### DESIGN PRESSURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:

- a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements.
- b. For a pressure of:
  1. 1250 psig on the suction side of the recirculation pump.
  2. 1650 psig from the recirculation pump discharge to the outlet side of the discharge shutoff valve.
  3. 1550 psig from the discharge shutoff valve to the jet pumps.
- c. For a temperature of 575°F.

##### VOLUME

5.4.2 The total water and steam volume of the reactor vessel and recirculation system is approximately 22,000 cubic feet at a nominal steam dome saturation (average) temperature of 533°F.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 23 TO FACILITY OPERATING LICENSE NO. NPF-69  
NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT NUCLEAR POWER STATION, UNIT NO. 2  
DOCKET NO. 50-410

1.0 INTRODUCTION

By letter dated November 9, 1989, as superseded April 10, 1990, Niagara Mohawk Power Corporation (the licensee or NMPC) submitted an application to modify the Technical Specifications which contain cycle-specific parameters. These changes were proposed in accordance with Generic Letter 88-16. License Amendment No. 17, issued on June 19, 1990, in response to this application, addressed all the changes proposed by the licensee with the exception of Technical Specifications 5.3.1 and 5.3.2, Design Features-Reactor Core. The proposed changes to Sections 5.3.1 and 5.3.2 are addressed in the following evaluation. By these changes, the fuel-type-specific description of the fuel assemblies and control rod assemblies would be replaced by a more general description.

2.0 EVALUATION

Section 5.3.1 currently describes a specific fuel assembly design. The proposed change removes the specific fuel assembly design and replaces it with a more generic description but still requires that the fuel assembly be one that has been approved for use in BWRs. The core operating limits in use by Niagara Mohawk Power Corporation are determined by General Electric Standard Applications for Reactor Fuel (GESTAR II), which is NRC-approved. Since NRC approval of GESTAR II is based on review of the specific fuel assembly designs described therein, NMPC will continue to use fuel assemblies that have been pre-approved by the NRC; any use of analytical methodologies and/or fuel designs that are not within the scope of the latest approved version of GESTAR II would require an amendment request.

The proposed changes to Section 5.3.2 similarly provides a generic description. Section 5.3.2 currently specifies a control rod assembly design that uses boron carbide powder (B<sub>4</sub>C) as the control material. The proposed change would provide that the control material shall be boron carbide powder and/or Hafnium metal. Hafnium metal is an NRC-approved control material and has been used in rod configurations similar to the Nine Mile Point design.

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### 3.0 SUMMARY

The staff has reviewed the proposed changes to Technical Specification Sections 5.3.1 and 5.3.2 on Design Features and finds these changes to be acceptable.

### ENVIRONMENTAL CONSIDERATION

This amendment involves a change in a requirement with respect to the installation or use of the facility components located within the restricted areas as defined in 10 CFR Part 20. The staff has determined that this 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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 this amendment.

### CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: October 12, 1990

### PRINCIPAL CONTRIBUTOR:

D. Oudinot