

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the matter of )  
 )  
Niagara Mohawk Power Corporation ) Docket No. 50-410  
 )  
(Nine Mile Point Nuclear Station Unit No. 2 )

APPLICATION FOR AMENDMENT

TO

OPERATING LICENSE

Pursuant to Section 50.90 of the Regulations of the Nuclear Regulatory Commission, Niagara Mohawk Power Corporation, holder of Facility Operating License No. NPF-69, hereby requests the revision of license condition 2.C.(3)b, the deletion of license condition 2.C.(3)b.i and ii, and the revision of license condition 2.C.(3)c as set forth in the license. The proposed changes have been reviewed in accordance with Section 6.5 of the Technical Specifications.

The proposed changes to the license are set forth in Attachment A to this application. License condition 2.C.(3) addresses Fuel Storage and Handling and the associated limitations on fuel assembly location during fuel movement. License Condition 2.C.(3)b.i and ii are deleted; license condition 2.C.(3)b is revised to read: "When not in the reactor vessel, no more than three fuel assemblies shall be allowed outside of their shipping containers or storage racks in the New Fuel Vault or Spent Fuel Storage Facility"; and license condition 2.C.(3)c is revised by changing "four" to "three" (fuel assemblies) in the first line.

The proposed changes will not authorize any change in the type of effluents or in the authorized power level of the facility. Supporting information and analysis that demonstrate the proposed changes involve no significant hazards consideration pursuant to 10 CFR § 50.92 are included in Attachment B. The purpose of requesting this license amendment is to provide necessary flexibility during refueling operations, achieve consistency with Nine Mile Point Unit 2 Updated Safety Analysis Report Section 9.1.4.2.11, and achieve consistency with normal Boiling Water Reactor fuel handling practices.

WHEREFORE, Applicant respectfully requests that the Facility Operating License No. NPF-69 be amended in the form attached hereto as Attachment A.

NIAGARA MOHAWK POWER CORPORATION

By

B. Ralph Sylvia  
B. Ralph Sylvia  
Exec. Vice President - Nuclear

Subscribed and Sworn to before me  
on this 17 day of Jan 1992.

Beverly W. Ripka  
NOTARY PUBLIC

BEVERLY W. RIPKA  
Notary Public State of New York  
Qual. in Oswego Co. No. 4544879  
My Commission Exp. Mar 31, 1992

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ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION

LICENSE NO. NPF-69

DOCKET NO. 50-410

Proposed Changes to the License

Replace existing page 4 of the license with the attached page. This page has been provided with marginal markings to indicate the changes.

(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, 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) Fuel Storage and Handling (Section 9.1, SSER 4)\*

- a. Fuel assemblies, when stored in their shipping containers, shall be stacked no more than three containers high.
- b. When not in the reactor vessel, no more than three fuel assemblies shall be allowed outside of their shipping containers or storage racks in the New Fuel Vault or Spent Fuel Storage Facility.
- c. The above three fuel assemblies shall maintain a minimum edge-to-edge spacing of twelve (12) inches from the shipping container array and approved storage rack locations.
- d. The New Fuel Storage Vault shall have no more than ten fresh fuel assemblies uncovered at any one time.

(4) Turbine System Maintenance Program (Section 3.5.1, 10, SER)

Niagara Mohawk Power Corporation shall submit for NRC approval by October 31, 1989, a turbine system maintenance program based on the manufacturer's calculations of missile generation probabilities.

(5) Inservice Inspection (Sections 5.2.4.3 and 6.6.3, SSER 5)

Niagara Mohawk Power Corporation shall submit an inservice inspection program in accordance with 10 CFR § 50.55a(g)(4) for staff review by July 31, 1987.

\* The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report (SER) and/or its supplements wherein the license condition is discussed.

## ATTACHMENT B

### NIAGARA MOHAWK POWER CORPORATION

LICENSE NO. NPF-69

DOCKET NO. 50-410

#### Supporting Information and No Significant Hazards Consideration

By letter dated November 27, 1985 the Staff issued Special Nuclear Materials (SNM) License SNM-1895 for Nine Mile Point Unit 2 (NMP2) that authorized Niagara Mohawk Power Corporation to receive, possess, inspect, and store uranium enriched in the U-235 isotope contained in fuel assemblies. In the application for the SNM license, Niagara Mohawk requested various authorizations regarding the fuel assemblies. Niagara Mohawk's SNM application stated, among other things, that the maximum number of fuel assemblies allowed outside a normal, approved storage location or normal shipping container is three (3) above the refuel floor and one (1) below the floor in the spent fuel confines. The Safety Evaluation issued in support of the SNM license identified these conditions and the SNM license incorporated them as License Conditions 18 and 19.

As stated in the Safety Evaluation issued with the SNM license, the SNM license automatically terminated upon issuance of the 10 CFR § 50 operating license for NMP2. However, the staff determined that specific conditions in the SNM license related to the storage and handling of unirradiated fuel assemblies also applied to operation under the 10 CFR § 50 operating license. As a result, to emphasize nuclear criticality safety for fuel assemblies out of authorized storage locations or shipping containers, the Staff conditioned the NMP2 Operating License NPF-69 by including license condition 2.C.(3)b. SSER-4, Section 9.1, discusses this condition and its basis.

After a review of pertinent NMP2 licensing documents concerning License Condition 2.C.(3)b, Niagara Mohawk believes this license condition should be amended because, in its present wording, it precludes the simultaneous use of both fuel preparation machines. This represents a departure from normal BWR fuel handling practices as described in General Electric's (GE) SIL 152, "Criticality Margins For Storage of New Fuel", March 31, 1976 and GE Technical Direction document 22A6042. Both documents allow three assemblies out of storage, but do not restrict location as to whether the assemblies should be above or below the refueling floor. For example:

"A fuel array of up to three fuel bundles outside of a normal storage area or normal shipping container should be maintained with an edge-to-edge spacing of 12 inches or more from all other fuel" (SIL No. 152, Procedural Recommendations for Normal Fuel Handling Operations, item 3).

"A fuel array of up to three fuel bundles or assemblies outside of a storage area or shipping container must maintain an edge-to-edge spacing of 12 inches or more from all other fuel" (GE 22A6042, section 10.2.2.b(3)).

"A fuel array of four or more fuel bundles outside of the normal fuel storage areas or properly designed fuel shipping container should be prohibited" (SIL No. 152, Procedural Recommendations for Normal Fuel Handling Operations, item 4).

"A fuel array of four or more fuel bundles or assemblies outside of the fuel storage areas or fuel shipping container is prohibited" (GE 22A6042, section 10.2.2.b.(4)).

"No more than two fuel bundles should be allowed in or around a fuel prep machine at any time. This fuel should be separated from the main body of stored fuel by at least 12 inches" (SIL No. 152, Procedural Recommendations for Normal Fuel Handling Operations, item 12).

"No more than two fuel bundles or assemblies are allowed around a fuel prep machine with fuel inside the prep machine, or a total of three fuel bundles or assemblies at any time. Around is defined as leaning adjacent to the fuel prep machine or pool wall adjacent to the machine. This fuel should be separated from the fuel storage racks by greater than 12 inches" (GE 22A6042, section 10.2.2.b.(7)).

Additionally, GE 22A6042 provides instructions for receiving nuclear fuel and loading reload fuel in BWRs. Section 4.6.3 of GE 22A6042 states:

4.6.3 Channeling and Dechanneling in the Fuel Storage Pool.

A section of the fuel storage pool is used for channeling and dechanneling operations, and two fuel preparation machines are provided for this purpose. The use of two machines permits simultaneous removal of channels from irradiated fuel bundles and installation of such reusable channel on new (unirradiated) fuel bundles. A fuel preparation machine may also be used to install a new channel on a new fuel bundle. Fuel bundles awaiting channeling or dechanneling are stored in fuel storage racks in the pool and transported to and from the fuel preparation machines by means of the refueling platform and fuel grapple. Refer to Appendix 10 for a listing of the procedural requirements for normal fuel handling operations.

Finally, License Condition 2.C.(3)b is also inconsistent with NMP2 USAR Section 9.1.4.2.11, which describes rechanneling of fuel using both fuel prep machines. Niagara Mohawk proposes the license amendment, as identified in Attachment A, to provide consistency with the guidance contained in these documents and operational flexibility during refueling operations.

The proposed changes to the license will not alter the limitations on fuel handling above the refuel floor. License Condition 2.C.(3) currently permits up to three assemblies above the refuel floor outside approved storage locations, and that provision is retained in the proposed revision. However, the allowed number of assemblies below the refueling floor outside approved storage locations will increase from one to three. General Electric has performed calculations demonstrating that four fuel pool assemblies in any configuration will remain subcritical in the fuel pool, provided a minimum



distance of 12 inches is maintained between these four assemblies and any surrounding assemblies. The proposed change limits the number of assemblies outside approved locations to three, and requires that a 12-inch spacing be maintained around the three assemblies. Therefore, fuel handling in accordance with the proposed amendment will not result in an inadvertent criticality.

Compliance with the proposed license conditions is maintained by the following:

- ° Supervision of all fuel movements by appropriately licensed Senior Reactor Operators per Technical Specification 6.2.2.f.
- ° Training of licensed fuel handlers as required by Technical Specification 6.4 and ANSI/ANS-3.1-1978.
- ° Use of approved procedures governing refueling operations per Technical Specification 6.8.1.c.
- ° The design of new fuel and spent fuel storage facilities.

Therefore, adequate assurance exists that any fuel movement will be in accordance with the proposed license provisions and consequently will not create the possibility of an inadvertent criticality in the fuel pool.

10 CFR § 50.91 requires that at the time a licensee requests an amendment, it must provide to the Commission its analysis, using the standards in Section 50.92, about the issue of no significant hazards consideration. Therefore, in accordance with 10 CFR § 50.91 and 10 CFR § 50.92, the following analysis has been performed:

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed license amendment increases the number of fuel assemblies in the spent fuel pool, allowed out of approved storage locations, from one to three. However, analyses have been performed demonstrating that no four assemblies in any configuration can be made critical, provided a 12 inch spacing between assemblies is maintained. With a limit of three assemblies out of their storage locations at any one time a criticality event cannot occur. Administrative and procedural controls assure compliance with the license condition. Thus, this amendment does not affect the probability of a criticality and/or a radiological event.

The proposed change of license condition 2.C.(3)c from "four" to "three" fuel assemblies merely reflects the proposed change in License Condition 2.C.(3)b and maintains consistency. This change is administrative in nature and does not affect the probability or consequences of any accident. Therefore, operation in accordance with the proposed amendment will not involve any increase in the probability or consequences of an accident previously evaluated.

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The Staff's Safety Evaluation dated November 27, 1985, issued in support of Special Nuclear Materials License No. SNM-1895 for NMP2 states, on page 6, that "Calculations have indicated that three assemblies out of storage cannot be made critical under any conditions." Other General Electric calculations have indicated that four assemblies out of storage cannot be made critical under any conditions. Thus, increasing the number of fuel assemblies allowed out of their shipping containers or storage racks to three will not create a criticality concern.

The proposed change of license condition 2.C.(3)c from "four" to "three" fuel assemblies merely reflects the proposed change in License Condition 2.C.(3)b and maintains consistency. This change is administrative in nature and does not alter any fuel handling requirements. Therefore, operation in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant reduction in a margin of safety.

The proposed license amendment does not change any of the requirements contained in Technical Specification Limiting Conditions for Operation and Surveillance Requirements or affect any of their assumptions or bases. All fuel movement will still be in accordance with the Administrative Controls contained in the Technical Specifications, therefore assuring compliance with the proposed amendment. Calculations have demonstrated that up to four bundles in any configuration cannot be made critical, therefore compliance with the proposed amendment provides adequate margin against an inadvertent criticality.

The proposed change of License Condition 2.C.(3)c from "four" to "three" fuel assemblies merely reflects the proposed change in License Condition 2.C.(3)b and maintains consistency. Therefore, operation of Nine Mile Point Unit 2, in addition with the proposed amendment, will not involve a significant reduction in a margin of safety.