Mr. John H. Mueller
Chief Nuclear Officer
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
Operations Building, Second Floor
P.O. Box 63
Lycoming, NY 13093

August 24, 1998

SUBJECT: SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION REGARDING INCREASED SPENT FUEL POOL STORAGE CAPACITY AT NINE MILE POINT NUCLEAR STATION, UNIT 1 (TAC NO. MA1945)

Dear Mr. Mueller:

By letter dated May 15, 1998, you submitted an application for license amendment to change Technical Specification 5.5, "Storage of Unirradiated and Spent Fuel." The changes would reflect proposed modifications to increase the storage capacity of the spent fuel pool at Nine Mile Point Nuclear Station, Unit 1. The NRC staff is reviewing this application and finds that additional information, identified in the enclosure, is needed. The requests in the enclosure supplement our requests by letter dated August 11, 1998.

Your response to the enclosure is requested within 45 days of receipt of this letter. If you should have any questions regarding this request or are unable to meet the requested response schedule, please contact me by phone at (301) 415-3049 or by electronic mail at dsh@nrc.gov.

Sincerely,

Original Signed by:

Darl S. Hood, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-220

Enclosure: Supplemental Request for Additional Information

cc w/encl: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 24, 1998

Mr. John H. Mueller
Chief Nuclear Officer
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
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Lycoming, NY 13093

SUBJECT: SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION REGARDING INCREASED SPENT FUEL POOL STORAGE CAPACITY AT NINE MILE POINT NUCLEAR STATION, UNIT NO. 1 (TAC NO. MA1945)

Dear Mr. Mueller:

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Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-220

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cc:

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Supervisor
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SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION
REGARDING SPENT FUEL POOL MODIFICATIONS
NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT NUCLEAR STATION, UNIT NO. 1
DOCKET NO. 50-220

In addition to the information requested by the NRC staff by letter dated August 11, 1998, provide the following additional information regarding the application for license amendment by letter dated May 15, 1998:

III. PLANT SYSTEMS

7. On page X-30 of the Updated Safety Analysis Report (UFSAR) for Nine Mile Point Nuclear Station Unit 1 (NMP1), Niagara Mohawk Power Corporation (NMPC) stated that it "committed to the Nuclear Regulatory Commission (NRC), in Technical Specification Amendment 54, that refueling and core offload operations would not begin until it was determined that spent fuel pool [SFP] cooling systems were operable, to ensure that the 125 $^{0}$F pool temperature would not be exceeded." In the May 15, 1998 submittal, 140 $^{0}$F is used as the SFP temperature limit in the thermal-hydraulic analyses. Thus, it appears that the SFP temperature limit is being raised from 125 $^{0}$F to 140 $^{0}$F. If this is correct, please provide detailed evaluation of the effects of this elevated SFP temperature limit on the design and operation of the SFP cooling systems. This should include the affect upon operator reaction time before pool boiling would occur in the event of a loss of all mechanical cooling systems.

8. In the thermal-hydraulic analysis (Section 5.0 of Attachments C and F of your submittal) for the unplanned (abnormal) full-core offload scenario, HOLTEC, International assumed, in part, that 36 days after 148 spent fuel assemblies (SFAs) from the previous planned refueling were discharged to the SFP, a full core was transferred to the pool, beginning no sooner than 150 hours after reactor shutdown. Table 5.5-1 of the SFP Re-racking Licensing Report indicates that after each planned refueling, 200 SFAs would be left in the pool. Therefore, it appears that the thermal-hydraulic analysis for the unplanned full-core offload scenario should be revised using 200 SFAs as the previously discharged SFAs. If this is correct, provide the revised results (i.e., decay heat load, SFP peak temperature, etc.). If this is not correct, explain why you consider the use of 148 SFAs to be acceptable for the unplanned full-core offload scenario.

9. As indicated in the SFP Re-racking Licensing Report, the heat removal capability of the SFP cooling system heat exchangers is a function of the temperature of the reactor building closed loop cooling (RBCLC) water system. To maintain the SFP water below the temperature limit of 140 $^{0}$F, the reactor shutdown time required before any SFAs are discharged to the SFP varies with RBCLC water temperature. Specifically, the following

reactor shutdown times required before discharging SFAs to prevent the SFP from exceeding the 140 $^{0}$F temperature limit during a planned full-core offload (normal refueling) operation have been established with RBCLC water at four temperatures:

| RBCLC Water Temperature, $^{0}$F | SFAs In Reactor Decay Time Required, Hrs. |
|---|---|
| 40 | 72 |
| 60 | 116 |
| 80 | 405 |
| 95 | 916 |

Provide the following information:

a. Has single active failure of the SFP cooling system been considered in establishing the above constraints?

b. HOLTEC, International recommends that the above constraints to fuel discharge operations be incorporated into appropriate plant procedures. What is NMPC's position regarding the establishment of procedures for these fuel discharge constraints?

c. What is NMPC's position and reasoning as to whether these restrictions should be included in the NMP1 TS?

10. Discuss the procedures to be utilized by NMPC staff to monitor and control SFP water temperature and decay heat load so that these parameters will remain within the design basis limiting values for planned or unplanned full core offload events.