October 4, 1988

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Docket No. 50-220

Mr. Charles V. Mangan
Senior Vice President
Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Dear Mr. Mangan:

SUBJECT: TECHNICAL SPECIFICATION BASES CHANGE REGARDING SPIRAL LOADING/UNLOADING FOR NINE MILE POINT UNIT NO. 1 (TAC NO. 69211)

In a letter dated March 16, 1988, you proposed a change to the Bases for Section 3.5.3 of the Nine Mile Point Unit No. 1 Technical Specifications. In your letter you indicated that by initiating loading at the geometric center, it is theoretically possible to reach a critical fuel loading with the nearest Source Range Monitor still located approximately two cells away from the nearest bundle. Furthermore, you indicated that, on the basis of recent discussions between General Electric and Niagara Mohawk, the sensitivity reduction in this configuration would be much greater than indicated in the staff's March 2, 1979 Safety Evaluation in Amendment No. 27. The revision to the Technical Specification Bases was proposed in order to better monitor neutron flux during fuel handling. The revised Technical Specification Bases change is enclosed.

Your letter of March 16, 1988, indicated that this change will not reduce the margin of safety of Nine Mile Point Unit 1. Furthermore, discussions with your staff have indicated that this change has been reviewed by your staff under the provisions of 10 CFR 50.59 and determined to not involve an unreviewed safety issue. The staff has no technical objection with the proposed change. The enclosed, revised page will be incorporated into the NRC controlled copies of the Nine Mile Point Unit No. 1 Technical Specifications.

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Mohawk should ensure that this change is incorporated into all copies of the Niagara Mohawk Nine Mile Point Unit No. 1 Technical Specifications.

In addition, your letter of March 16, 1988, indicated that the fuel loading procedure would be revised to use the spiral loading/unloading sequence with a source range monitor location as the center of the spiral. This procedure and any other applicable procedures should be revised to reflect this change before any future spiral loading/unloading operations proceed.

Sincerely,

original signed by

Mary F. Haughey, Project Manager
Project Directorate I-1
Division of Reactor Projects I/II

Enclosure:
As stated

cc: See next page

| PDI-1 | PDI-1 | SRXB | PDI-1 |
|---|---|---|---|
| CVogan | MHaughey:vr | MWHodges | RCapra |
| 9/26/88 | 9/27/88 | 9/28/88 | 9/8/88 |

Mr. C. V. Mangan
Niagara Mohawk Power Corporation

Nine Mile Point Nuclear Station,
Unit No. 1

cc:

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Assistant Attorney General
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## BASES FOR 3.5.3 EXTENDED CORE AND CONTROL ROD DRIVE MAINTENANCE

The intent of this specification is to permit the unloading of a significant portion of the reactor core for such purposes as removal of temporary control curtains, control rod drive maintenance, in-service inspection requirements, examination of the core support plate, etc. When the refueling interlock input signal from a withdrawn control rod is bypassed, administrative controls will be in effect to prohibit fuel from being loaded into that control cell.

These operations are performed with the mode switch in the "Refuel" position to provide the refueling interlocks normally available during refueling. In order to withdraw more than one control rod, it is necessary to bypass the refueling interlock on each withdrawn control rod. The requirement that the fuel assemblies in the cell controlled by the control rod be removed from the reactor core before the interlock can be bypassed insures that withdrawal of another control rod does not result in inadvertent criticality. Each control rod essentially provides reactivity control for the fuel assemblies in the cell associated with the control rod. Thus, removal of an entire cell (fuel assemblies plus control rod) results in a lower reactivity potential of the core.

The SRM's are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and station startup. Requiring two operable SRM's, one in and one adjacent to any core quadrant where fuel or control rods are being moved, assures adequate monitoring of that quadrant during such alterations. The requirement of 3 counts per second provides assurance that neutron flux is being monitored.

A spiral unloading pattern is one by which the fuel in the outermost cells (four fuel bundles surrounding a control blade) is removed first. Unloading continues by removing the remaining outermost fuel by cell. The last cell removed will be adjacent to a SRM. Spiral reloading is the reverse of unloading. Spiral unloading and reloading will preclude the creation of flux traps (moderator filled or partially filled cells surrounded on all sides by fuel).

During spiral unloading, the SRM's shall have an initial count rate of 3 cps with all rods fully inserted. The count rate will diminish during fuel removal. After all the fuel is removed from a cell, the refueling interlock will be bypassed on the corresponding control rod. Prior to withdrawal of that rod, one licensed operator and a member of the reactor analysis staff will verify that the interlock bypassed is on the correct control rod. Once the control rod is withdrawn, it will be valved out of service.

Under this special condition of complete spiral core unloading, it is expected that the count rate of the SRM's will drop below 3 cps before all of the fuel is unloaded. Since there will be no reactivity additions, a lower number of counts will not present a hazard. When all of the fuel has been removed to the spent fuel storage pool, the SRM's will no longer be required. Requiring the SRM's to be operational prior to fuel removal assures that the SRM's are operable and can be relied on even when the count rate may go below 3 cps.

October 4, 1988

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