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FEB 6 1974

Docket No. 50-220

Niagara Mohawk Power Corporation
ATTN: Mr. Philip D. Raymond
Vice President - Engineering
300 Erie Boulevard West
Syracuse, New York 13202

Gentlemen:

Your letter dated September 14, 1973, requested authorization to refuel the Nine Mile Point Unit 1 (NMP-1) reactor with up to 120 fuel bundles of the 8 x 8 design. You have submitted additional information concerning this proposed reload fuel by letters dated October 15, 1973, January 15 and January 22, 1974. We have reviewed this information and find that the additional information listed in the enclosure is necessary to continue our review and evaluation. The requested information refers to your submittal dated January 15, 1974.

We request that the additional information be provided by February 19, 1974, with one signed original and thirty-nine additional copies.

Sincerely,

Original signed by
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Directorate of Licensing

Enclosure:
Request for Information

cc w/enclosure:
J. Bruce MacDonald, Esquire
Deputy Commissioner and Counsel
New York State Department of Commerce and Counsel to the Atomic Energy Council

Arvin E. Upton, Esquire
LeBoeuf, Lamb, Leiby & MacRae

Dr. William Seymour
Staff Coordinator
New York State Atomic Energy Council
New York State Department of Commerce

Anthony Z. Roisman, Esquire
Berlin, Roisman and Kessler

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X7403 SURNAME	CJDeBevec:sjh	RMDiggs	DLZiemann	VStello		
DATE	2/4/74	2/4/74	2/6/74	2/6/74		

REQUEST FOR INFORMATION

1. Attachment A, Question 5

Although comparisons of predictions with results from the 8 x 8 stainless steel bundle spray cooling tests indicate that the core heatup model slightly overpredicts the test results, the steady state radiation test results are underpredicted. Furthermore, the relatively thick clad of the stainless steel heaters may have resulted in circumferential temperature gradients which are significantly lower than presented in a fuel assembly. Provide the calculated individual fuel rod clad temperatures and similarly individual rod clad temperatures obtained from the 8 x 8 zircaloy test bundle to enable us to determine whether peak clad temperatures in a fuel assembly can be adequately predicted.

2. Attachment A, Question 7

The statement in response to question 7 that "dryout times predicted by the non-jet pump correlation are a function of the bundle average surface heat flux" is incorrect. As shown on Figure C-1 of APED-5458, the dryout time is 26% of the ratio of the energy required to vaporize all the fluid in the test section to the total energy addition rate to the test section. The total energy addition rate is the same for 8 x 8 and 7 x 7 fuel assemblies. However, the energy required to vaporize the fluid in an 8 x 8 assembly is less than in a 7 x 7 assembly since the lower flow rate in an 8 x 8 assembly results in a higher average quality. Provide clarification of the information.

3. Attachment A, Questions 7 and 8

Justify and explain the relevance of the statement made in response to question 8 that "the blowdown is assumed to continue until the vessel pressure is at 35 psia in the current analysis since the break flow will still be critical at this pressure or less". Since the containment analysis shows that the break flow is essentially zero at 20 seconds, and the pressure is 22 psig, what is the basis for assuming flow beyond 20 seconds?

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What is the relevance of break flow in the calculation of blowdown heat transfer coefficients. Since break flow would affect heat transfer in both types of assemblies similarly, justify using a long blowdown time for 8 x 8 assemblies relative to 7 x 7 assemblies.

4. Attachment A, Questions 7 and 8

The analysis of 8 x 8 assemblies using dryout and end-of-blowdown times that are longer than those used in the analysis of 7 x 7 assemblies is unjustified. Submit curves of peak clad temperature versus time assuming the dryout times, heat transfer coefficients, and blowdown times used to calculate the temperatures in 7 x 7 assemblies and presented in response to question 8.

5. Attachment B, Question 4.4

The statement in response to question 4.4 that the requested information was provided in a September 14, 1973 letter is incorrect. Hot channel flow rate, bundle power, axial and local peaking factors, and exit void fraction were requested. Table 2 of the September 14, 1973 letter provides only hot channel flow. Page 3 of the letter provides peaking factors, but does not relate them to the results in Table 2. No rod-to-rod peaking factors are provided. Only core average void fraction is given in Table 2. Provide the requested information.

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