

January 19, 2000

Mr. Raymond P. Necci, Vice President
Nuclear Oversight and Regulatory Affairs
c/o David A. Smith, Manager
Regulatory Affairs
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385

SUBJECT: MILLSTONE NUCLEAR POWER STATION, UNIT 1 - REQUEST FOR
ADDITIONAL INFORMATION REGARDING A REQUEST FOR EXEMPTION
FROM THE SECONDARY FINANCIAL PROTECTION REQUIREMENTS OF
10 CFR 140.11(a)(4) (TAC NO. MA6658)

Dear Mr. Necci:

This is a request for the plant specific evaluation (referenced in your September 28, 1999, request for exemption from the financial protection requirements of 10 CFR 140.11(a)(4)) of the potential for a zirconium fire following a postulated beyond design basis event resulting in the complete loss of the spent fuel pool water inventory at Millstone, Unit 1 (MP1).

Background

By letter dated September 28, 1999, Northeast Nuclear Energy Company (NNECO) requested an exemption from the secondary financial protection requirements of 10 CFR 140.11(a)(4). The request is supported by, among other things, reference to a plant specific evaluation of the potential for a zirconium fire caused by a beyond design basis event. The staff informed NNECO by telephone that it would be necessary for NNECO to provide the analysis to the staff. NNECO expressed reluctance to provide the analysis, citing the lack of any approved standard or precedent against which the analysis could be evaluated, but offered to meet with the staff to discuss the analysis and respond to staff questions. A meeting was held on November 15, 1999, and after the NNECO presentation and responses to staff questions, the staff restated its need to have the analysis. NNECO maintained its initial position (i.e., withheld the analysis report), but provided the staff a two page executive summary of the report. The meeting ended with the staff informing NNECO that the issue would be further considered by staff management, and NNECO would be informed of the staff position. A meeting summary was issued December 2, 1999, and is attached as Enclosure 1.

Discussion

An exemption request by a licensee is a request to do what is not currently permitted under its license and applicable regulations, and it represents a proposed deviation from how the facility is licensed. By its very nature of being a special circumstance, there are often no approved

methodologies for exemptions. When considering exemptions, the staff has an obligation to satisfy additional considerations about why it is acceptable to allow a licensee to operate outside of existing regulations.

In addition to the plant specific analysis referenced in your exemption request, your request also references the results from generic studies you believe are applicable to the spent fuel pool at MP1. The two generic studies regarding a complete spent fuel pool drain down and the potential for zirconium fire are (1) NUREG/CR-0649, "Spent Fuel Heatup Following Loss of Water During Storage" which was performed in support of Generic Safety Issue (GSI) 82, "Beyond Design Basis Accidents in Spent Fuel Pools," and (2) NUREG/CR-6451, "A Safety and Regulatory Assessment of Generic BWR and PWR Permanently Shutdown Nuclear Power Plants." The NUREG/CR-0649 study was focused on investigating the phenomena of runaway zirconium oxidation and a subsequent fire. The NUREG/CR-6451 study conclusions on critical decay times were based on results from a newly written code that was not verified or validated. The staff has identified code errors and non-conservatisms that would increase the critical decay times reported in NUREG/CR-6451. While these studies provided useful insights on runaway zirconium oxidation, neither study was intended to provide a basis for exemptions. As such, they do not provide the necessary technical information to support a regulatory decision for a specific plant.

You have indicated that the decay heat for the peak power fuel bundle is 3.4 KW/MTU. Although this decay heat value is less than the critical value of 6 KW/MTU identified in the resolution of GSI 82, it is within the window of concern for runaway zirconium oxidation identified by the Technical Working Group in the reexamination of the issue as it relates to decommissioned plants. As you have stated, there is no approved methodology to calculate the potential for runaway zirconium oxidation that leads to a large offsite release of radioactivity. The staff has been reviewing plant specific calculations on a case by case basis and requires your detailed calculations in order to process your exemption request.

The staff understands the analysis report being requested is based on a substantial volume of underlying additional information, calculations, data, etc. If, after reviewing the analysis report, the staff believes certain additional information is required before the evaluation can be completed, your representative will be contacted by telephone for a discussion of the staff's interests. If it is then determined that certain information is still required, you may then extract only what the staff requires from the supporting documents and forward it to the staff via formal correspondence. If the staff determines that a substantial amount of information is required beyond that which is contained in the analysis report, consideration will be given to traveling to your facility to review the information. Regardless of how any needs for additional information are resolved, in all cases the entire basis for the staff's safety analysis will be placed in the MP1 docket file.

Based on all the above, the staff requests that the plant specific analysis report (same document for which the executive summary has already been provided) referenced in your September 28, 1999, exemption request be submitted for evaluation. This request was discussed with Mr. Bryan Ford on January 4, 2000, and a mutually agreeable target date of March 3, 2000, for your response was established. If circumstances arise which result in the

Mr. Raymond P. Necci

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need to revise this target date, or if you have any questions regarding this request, please have your representative call me at the earliest opportunity at (301) 415-1444.

Sincerely,

/RA/

Louis L. Wheeler, Senior Project Manager
Decommissioning Section
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-245

Enclosure: As stated

cc w/encl: See next page

Mr. Raymond P. Necci

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December 1999

Millstone Nuclear Power Station
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