

February 25, 2000

MEMORANDUM TO: James Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Victor Nerses, Senior Project Manager, Section 2 */RAI/*
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: MILLSTONE, UNIT 3, DRAFT REQUEST FOR ADDITIONAL
INFORMATION, SPENT FUEL POOL RERACK (TAC NO. MA5137)

The attached request for additional information (RAI) was transmitted by facsimile on February 25, 2000, to Mr. D. Dodson of Northeast Nuclear Energy Company. Review of the RAI would allow the licensee to determine and agree upon a schedule to respond to the RAI. This memorandum and the attachment do not convey a formal request for information or represent an NRC staff position.

Docket No. 50-423

Attachment:

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Attachment:

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Project Manager

OFFICE	PDI, S2/PM
NAME	VNerses
DATE	2/25/00

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REQUEST FOR ADDITIONAL INFORMATION ON PROPOSED REVISION TO THE
MILLSTONE NUCLEAR POWER STATION UNIT 3 TECHNICAL SPECIFICATIONS
FOR SPENT FUEL RERACK (TAC NO. MA5137)

1. You indicated in Chapter 6 of the Reference cited below that the structural analyses of the spent fuel racks for the required loading conditions were performed in compliance with the US NRC Standard Review Plan (SRP) and the former US NRC Office of Technology (OT) position paper related to spent fuel storage. With respect to your structural analyses using the DYNARACK computer code:
 - (a) Explain how the target (design basis) response spectra (referred to in Section 6.4 of the Reference) was obtained.
 - (b) You state in Section 6.9.1 of the Reference that the low value (i.e., 1.03 inches) of the maximum rack displacement (shown in the Table titled "Rack Displacement Results,") indicates that rack overturning is not a concern. Justify this statement by providing the results of the rack overturning analyses that identify that the design criteria related to kinematic stability (i.e., minimum safety factors against rack overturning of 1.5 for OBE and 1.1 for SSE specified in SRP 3.8.5) are satisfied.
2.
 - (a) Section 7.4.2 "Deep Drop Events" in the Reference states that the "deep drop" through an interior cell does produce some deformation of the baseplate and localized severing of the baseplate/cell welds. You further indicate that the fuel assembly support surface is displaced by a maximum of 2.9 inches, which is less than the distance of 4-5/8 inches from the baseplate to the liner. Provide the design limit of the allowable deformation of the baseplate, and discuss the impact of the localized severing of the baseplate/cell wall welds on the integrity of the racks and the fuel assemblies.
 - (b) In the same section on Deep Drop Events cited above, you state that the deep drop event whereby the impact region is located above the support pedestal produces a negligible deformation on the baseplate, and a maximum stress in a localized region is limited to only 25 ksi. Provide the maximum stress in the concrete slab, and the failure limits of the stresses in the liner and in the concrete slab, citing the references which give these failure limits.
3. You indicated in Chapter 8 of the Reference that the design conditions described in SRP 3.8.4 and American Concrete Institute (ACI) Code 349-85 were used as guidance in the calculations of the spent fuel pool (SFP) capacity. With respect to the SFP capacity calculations using the ANSYS computer code discussed in Chapter 8 of the Reference, explain how the interface between the liner and the concrete slab is modeled, and also how the liner anchors are modeled; explain how such modeling accurately represents the real structural behavior.
4. Provide a Table showing the maximum bulk pool temperature for the three discharge scenarios (Section 5.3 in the Reference), and discuss the basis for allowing the bulk pool temperature to exceed the code allowable temperature of 150°F for any of the scenarios, if such a condition exists.

REFERENCE:

Letter, dated March 19, 1999 from R. P. Necci, to U.S. NRC, "Millstone Nuclear Power Station, Unit No. 3 Proposed Revision to Technical Specification -- Spent Fuel Pool Rerack (TSCR 3-22-98)," Attachment 5 titled "Licensing Report for Spent Fuel Rack Installation at Millstone Nuclear Station Unit 3."