

February 24, 1988

Docket No. 50-336

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Mr. Edward J. Mroczka, Senior Vice President
Nuclear Engineering and Operations
Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06141-0270

Dear Mr. Mroczka:

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT -
MILLSTONE NUCLEAR POWER STATION, UNIT 2, SPENT FUEL CONSOLIDATION

Enclosed is a copy of an "Environmental Assessment and Findings of No Significant Impact," for your information, which relates to your May 21, 1986 application for license amendment concerning consolidation of spent fuel at Millstone Unit 2. On May 27, 1987, we issued an Environmental Assessment and Finding of No Significant Impact, which was considered a partial response to the May 21, 1986 application, in that a limited demonstration of the consolidation process was addressed. The enclosed Environmental Assessment and Finding of No Significant Impact addresses the unlimited use of the spent fuel consolidation process at Millstone Unit 2.

This assessment has been forwarded to the Office of the Federal Register for publication.

Sincerely,

original signed by

David H. Jaffe, Project Manager
Project Directorate I-4
Division of Reactor Projects I/II

Enclosure:
Environmental Assessment

cc w/enclosure:
See next page

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U. S. NUCLEAR REGULATORY COMMISSION
NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.
MILLSTONE NUCLEAR POWER STATION, UNIT 2

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of changes to the Millstone Unit 2 Technical Specifications (TS), to allow unlimited use of a spent fuel consolidation process, to Northeast Nuclear Energy Company, et al. (the licensee), for the Millstone Nuclear Power Station, Unit 2, located in New London County, Connecticut.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action: On June 2, 1987, the NRC staff issued Amendment No. 117 to Facility Operating License No. DPR-65 which permitted storage of consolidated spent fuel at Millstone Unit 2 in partial response to the licensee's application dated May 21, 1986. Amendment No. 117 expanded the number of storage locations from 1112 to 1346 by permitting the storage of consolidated spent fuel boxes in locations required to be blocked with cell blocking devices when surrounding locations are used for the storage of unconsolidated assemblies. Amendment No. 117 allowed the storage of 1965 assemblies in 1346 locations, taking into account the mix of locations needed for intact fuel assemblies and locations used for storage of consolidated fuel boxes (each equivalent to 2 intact fuel assemblies). The Environmental Assessment and Finding of No Significant Impact associated with Amendment No. 117 was published in the FEDERAL REGISTER on June 1, 1987 (52 FR 20477).

However, Amendment No. 117 contained a footnote in TS 3.2.20, "Spent Fuel Pool," that limited the storage of consolidated spent fuel storage boxes to five (5).

The NRC staff is now considering a change to the TS to remove the footnote to TS 3.2.20. The change would remove the limitation restricting the storage of consolidated spent fuel boxes to five (5).

In response to the NRC staff's questions on the licensee's amendment requested dated May 21, 1986, the licensee provided answers in a letter of April 30, 1987. Attached to the letter was a document entitled "Fuel Consolidation Demonstration Program." The licensee, with the NRC staff's knowledge, undertook the consolidation of ten (10) assemblies pursuant to the provisions of 10 CFR 50.59. The staff will review the consolidation process in connection with authorizing the use of the expanded capacity of the spent fuel pool that results from the use of the consolidation process.

The Need for the Proposed Action: The proposed license amendment is necessary to improve the spent fuel storage situation at Millstone Unit 2. At the present time, the ability to off-load a reactor core into spent fuel pool storage will be lost after 1994, and spent fuel pool storage will be full in 1998. The proposed spent fuel consolidation storage capability will allow a delay until 2009 at which time the spent fuel pool storage will be full.

Environmental Impacts of the Proposed Action: The NRC staff has evaluated the radiological (off-site and on-site) and nonradiological impacts of the proposed license amendment. The Environmental Assessment associated with Amendment No. 117 addressed the full range of potential environmental impacts associated with storage of unlimited consolidated spent fuel at Millstone Unit 2.

The actual consolidation process involves a machine, located in the spent fuel storage pool, which removes the fuel rods from a spent fuel assembly and

transfers these rods to a storage canister. The consolidation machine is designed to prevent fuel damage. In addition, a TV camera is utilized to detect damaged fuel rods which would be removed for storage in a damaged rod storage box. The above notwithstanding, a fuel assembly might be damaged during consolidation. As indicated in the Safety Evaluation issued in support of Amendment No. 117, "...approximately 15000 Millstone Unit 2 fuel assemblies which have been subcritical for 120 days would have to be ruptured to obtain a dose equivalent to 1/4 of that allowed in 10 CFR Part 100." Since fuel, to be consolidated, is required to have at least five years decay-time, the damage of a fuel assembly in the consolidation process is not significant.

With regard to the waste generated by the consolidation process, this waste falls into two categories. The first category is the fuel assembly skeletons and end fittings. Following removal of the spent fuel pins, the remainder of the fuel assembly (end fittings, guide tubes, and grids) will be stored in boxes in the spent fuel pool. These boxes will be shipped off-site. The second category of waste is generated by special filters which will pick up any loose material (crud) generated by the consolidation process. These filters will be handled in the same way as other, similar filters (e.g., spent fuel pool filters). In the case of both types of waste, these materials would have been retained as part of the spent fuel and ultimately shipped off-site with the spent fuel. Thus, we conclude that no net additional waste is generated by the consolidation process.

Finally, with regard to occupational exposures, the consolidation machine is located at the bottom of the spent fuel pool and operated remotely. Thus, the occupational exposure will not be significantly different from that

occurring from similar activities in the spent fuel pool. This conclusion was confirmed by the licensee during the recent demonstration of the spent fuel consolidation process. Accordingly, we conclude that, over the lifetime of the facility, the consolidation process will not significantly add to the occupational exposure at Millstone Unit 2. During use of the consolidation process, equipment failure may necessitate additional radiation exposure to operating personnel. Under these conditions, the licensee will utilize existing organizations and procedures to assure that such exposures will be "as low as is reasonably achievable".

The NRC staff concludes that there are no additional, measurable, environmental impacts associated with the use of the spent fuel consolidation process described in the licensee's submittal dated April 30, 1987.

Alternative Use of Resources: This action involves no use of resources not previously considered in the Final Environmental Statement for the Millstone Nuclear Power Station, Unit 2.

Agencies and Persons Consulted: The NRC staff reviewed the licensee's request and did not consult other agencies or persons.

FINDINGS OF NO SIGNIFICANT IMPACT

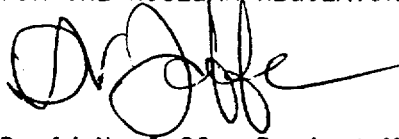
The Commission has determined not to prepare an environmental impact statement for the proposed amendment.

Based upon the foregoing environmental assessment, we conclude that the proposed action will not have significant effect on the quality of the human environment.

For further details with respect to this action, see (1) the application for amendment dated May 21, 1986, as supplemented by letter dated April 30, 1987, (2) Amendment No. 117 to Facility Operating License No. DPR-65, and (3) the Environmental Assessment and Finding of No Significant Impact (52 FR 20477). All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., and at the Waterford Public Library, 49 Rope Ferry Road, Waterford, Connecticut. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulation Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Projects I/II.

Dated at Rockville, Maryland, this 24 day of February 1988.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'D. H. Jaffe', with a long horizontal flourish extending to the right.

David H. Jaffe, Project Manager
Project Directorate I-4
Division of Reactor Projects I/II