NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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December 12, 1983

Docket No. 50-336
B10962

Director of Nuclear Reactor Regulation
Attn: Mr. James R. Miller
Operating Reactors Branch #3
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

References: (1) E. J. Mroczka letter to T. E. Murley, dated August 12, 1983.

(2) W. G. Counsil letter to J. R. Miller, dated November 4, 1983.

(3) W. G. Counsil letter to J.R. Miller, dated November 17, 1983.

(4) R. A. Wiesemann letter to J. R. Miller, dated December 6, 1983 (CAW-83-107).

Gentlemen:

Millstone Nuclear Power Station, Unit No. 2
Fuel Assembly Holddown Springs

Northeast Nuclear Energy Company (NNECO) informed the NRC Staff in Reference (1) that one broken holddown spring had been identified on each of fifteen (15) fuel assemblies at Millstone Unit No. 2. Specific details of the fuel assembly inspections performed during the current refueling outage and the broken holddown springs, were provided to the Staff at a meeting in your Bethesda offices on October 12, 1983. A summary of the information presented at the October 12, 1983 meeting was docketed in Reference (2).

Eight (8) of the fifteen failures occurred in Region F fuel and seven (7) were found in Region G. Fourteen (14) of the fuel assemblies with broken springs were located adjacent to the core shroud for at least one cycle of operation. The other broken spring was located in a damaged assembly (F73), and this damage caused the spring to operate with a higher mean stress than springs in other fuel assemblies. At the October 12, 1983 meeting, NNECO documented plans to evaluate the replacement of the broken holddown springs in the irradiated fuel assemblies prior to use of this fuel in Cycle 6 operations. These evaluations have been completed. NNECO has determined that Cycle 6 operation utilizing fuel assemblies with broken holddown springs is acceptable and prudent.

The information provided in Attachments 1 and 2 addresses the various considerations which have been evaluated regarding operation with broken holddown springs. Nine (9) assemblies, each with a single broken holddown spring, will be utilized in the Cycle 6 core redesign. A tenth fuel assembly with

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a broken holddown spring, assembly F59, was reworked with redesigned springs and will be utilized in the Cycle 6 loading pattern. The broken spring in this assembly was broken at a central coil location. The break was such that one could postulate the broken spring ends intermeshing and rotating relative to each other thus further reducing the holddown force provided by this spring, even though the friction forces were expected to inhibit such motion.

A repair procedure and tooling was developed to effect the replacement of the holddown springs on irradiated fuel assemblies. The process was utilized successfully on assembly F59 as noted above. However, it is NNECO's opinion that the irradiated fuel repair procedure has the potential for damaging a fuel assembly, particularly damage to fuel pins during the repair. The redesign Cycle 6 loading pattern provided in Reference (3) is predicated on the use of the nine assemblies with broken holddown springs. Damage to any of these fuel assemblies would require a redesign of the Cycle 6 loading pattern and reevaluation of the docketed safety analyses.

In addition, the economic implications of extending the refueling outage to either repair an assembly damaged during spring replacement or redesign the loading pattern are substantial. These considerations together with the attached evaluations of operation with broken holddown springs form the basis for NNECO's plans to operate Millstone Unit No. 2 with nine fuel assemblies, each with a single broken holddown spring.

Portions of the material contained in Attachment 2 are proprietary to Westinghouse Electric Corporation. It is requested that Attachment 2 be withheld from public disclosure in accordance with the provisions of 10CFR2.790 and that this material be safeguarded. The reasons for the classification of this material as proprietary are delineated in the letter and accompanying affidavit of Reference (4).

We trust you find this information satisfactory.

Very truly yours,

NORTHEAST UTILITIES SERVICE COMPANY

W. G. Counsil
Senior Vice President