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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May 15, 1984

Docket No. 50-423
B11168

Director of Nuclear Reactor Regulation
Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Reference: (1) B. J. Youngblood to W. G. Counsil, Draft SER for Millstone Nuclear Power Station, Unit 3, December 20, 1983.

Dear Mr. Youngblood:

Millstone Nuclear Power Station, Unit No. 3
Response to Auxiliary Systems Branch Draft SER Open Items

Attached are the responses to the Auxiliary Systems Branch Draft SER Open Items ASB-2, ASB-3 and ASB-12 contained in the above reference. These responses should fully resolve the staff's concerns regarding the open items.

If there are any questions, please contact our licensing representative directly.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY ET AL
by Northeast Nuclear Energy Company
Their Agent

W. G. Counsil
Senior Vice President

STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me W. G. Counsil, who being duly sworn, did state that he is Senior Vice President of Northeast Nuclear Energy Company, an Applicant herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Applicants herein and that the statements contained in said information are true and correct to the best of his knowledge and belief.

Notary Public

My Commission Expires March 31, 1988

Boo1 1/1

Open Items

Auxiliary Systems Branch

ASB-2 Failure Due to Non-seismic CAT I Equipment
Inside Safety-related Structures (Draft SER Section 3.4.1, 9.2.1, 9.3.3)

The applicant has not adequately addressed flooding resulting from failures of non-seismic Category I tanks, piping, and vessels inside safety-related structures per SRP Section 3.4.

Response (5/84)

The plant design basis for internal flooding due to postulated piping failures is developed by considering the worst case fluid release from a single piping failure per ASB3-1 section 3.3.a. The worst case condition is established by considering fluid inventory, discharge rate, leak detection capability, isolation time, location of safety related equipment and the capacity of structures to withstand hydrostatic and buoyancy loads.

Non-QA Category I tanks and vessels in safety related structures do not contain sufficient inventory to cause flooding of safety related equipment resulting from a hypothetical worst case single tank or vessel failure. In addition, safety related equipment required for safe shutdown of the plant is located in cubicles, or on elevated platforms which would preclude damage due to flooding resultant from postulated failures of Non-QA Cat I tanks or vessels during a seismic event.

Internal flooding due to gross catastrophic failure of more than one non-seismic tanks, piping systems, or vessels is not considered credible and is therefore not postulated. This position is supported by historical evidence of survival of such components through major seismic events in both power and petrochemical plants.

The consequences of flooding of safety related equipment are assessed in combination with the most limiting single active failure in a mitigating system. Also considered are the dynamic and environmental effects of pipe whip and jet impingement on essential systems, structures and components.

Open Items

Auxiliary Systems Branch

ASB-3 Analysis for Internally Generated Missiles Inside Containment (Draft SER Section 3.5.1.1)

The applicant should confirm that his analysis has considered pressurized gas bottles, accumulators and instrument wells as potential missiles.

Response

Refer to the revised FSAR Section 3.5.1.2.1.

engineered safety feature nor radiation release or damage the containment boundary.

In addition, a missile accident which is not caused by a LOCA shall not initiate a LOCA. Table 3.5-2 identifies the structures, systems, and components inside the containment whose failure could lead to offsite radiological consequences or which are required for safe plant shutdown to a cold condition assuming an additional single failure.

Equipment inside the containment has been evaluated for potential missile generation. As a result of this review, the following information concerns potential missile sources and systems which require protection from internally generated missiles inside the containment.

3.5.1.2.1 Missile Selection and Description

Failure of the reactor vessel, steam generators, pressurizer, and reactor coolant pump casings leading to missile generation are not considered credible because of the combination of material characteristics, inspections, quality control during fabrication, erection, and operation, conservative design, and prudent operation as applied to the particular component.

The reactor coolant pump flywheel is not considered a source of missiles for the reasons discussed in Section 5.4.1. Nuts and bolts are of negligible concern because of the small amount of stored elastic energy.

Centrifugal pumps, fans, and air compressors (centrifugal and axial) located inside the containment have been evaluated for missiles associated with overspeed failure. The maximum no-load speed of these centrifugal pumps, fans, and air compressors is equivalent to the operating speed of their motors. Therefore, no overspeed is expected and missiles associated with centrifugal pumps, fans, or air compressors within the containment are not postulated.

Insert A

The following nuclear steam supply system components are considered to have a potential for missile generation inside the reactor containment:

1. Control rod drive mechanism housing plug, drive shaft, and the drive shaft and drive mechanism latched together
2. Valves
3. Temperature and pressure sensor assemblies
4. Pressurizer heaters

A rod failure of a control rod mechanism housing, sufficient to allow a control rod to be rapidly ejected from the core, is not considered credible for the following reasons:

INSERT A

Pressurized gas bottles, accumulators and instrument wells in the balance of plant systems are considered to be potential source of internally generated missiles.

Open Items

Auxiliary Systems Branch

ASB-12 Safety Related Equipment on Lowest Elevation (Draft SER Section 9.3.3)

The applicant should verify that the safety-related equipment located on the lowest elevation is protected by watertight doors or is otherwise protected, and should discuss why this protection is adequate. This is an open item.

Response (5/84)

Safety related equipmen. located at the lowest elevation of the ESF building is separated into separate, train related cubicles. These cubicles are designed to prevent water intrusion from sources both internal and external to the building. The cubicles have watertight walls to elevation 21'-6" which protect the redundant trains of safety-related equipment from a single passive failure of piping. Safety-related level instrumentation (3DAS LS66 A/B) located in these cubicles will alarm in the control room when the water level in either cubicle reaches a depth of 2 inches. Ladder access is provided to these cubicles from the 21'-6" elevation.

A flooding analysis was performed, assuming operator action within thirty minutes, subsequent to the postulated piping failure. It was verified that the safety-related level alarms would provide sufficient warning for the operator to take appropriate action. Maximum depth of water in worst case scenario is 9.7 feet which is below RSS pump motors located in these cubicles (el - 28.5).