

NORTHEAST UTILITIES



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

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November 19, 1981

Docket No. 50-245
B10338



Director of Nuclear Reactor Regulation
Attn: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Reference: (1) W. G. Council letter to D. M. Crutchfield, dated
August 31, 1981.

Gentlemen:

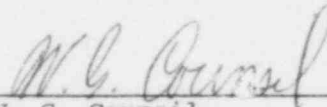
Millstone Nuclear Power Station, Unit No. 1
SEP Topic III-4.A, Tornado Missiles

In Reference (1), Northeast Nuclear Energy Company (NNECO) submitted the Safety Assessment Report (SAR) for SEP Topic III-4.A, Tornado Missiles, for Millstone Unit No. 1. Subsequent to the docketing of Reference (1), the Staff identified additional information required to complete the evaluation of this SEP Topic. In accordance with this request, NNECO is providing Attachment 1 as an Addendum to the SAR submitted in Reference (1).

We trust the Staff will appropriately use this information to develop a Safety Evaluation Report for this SEP Topic.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY


W. G. Council
Senior Vice President

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SEND Drawing to:
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Pm (5)

Attachment 1

Addendum to Safety Assessment Report

SEP Topic III-4.A, Tornado Missiles

November, 1981

TOPIC III-4A TORNADO MISSILES
MILLSTONE UNIT 1
ADDENDUM

The following has been added to address a staff request for additional information.

REQUEST

Verify adequate tornado missile protection for (a) the cable spreading room, (b) the diesel generator air intake and exhaust vents, (c) the gas turbine air intake and exhaust vents, (d) essential room chillers and HVAC systems, (e) the diesel generator, (f) the condensate booster pumps, (g) liquid and gaseous radwaste systems, and (h) fuel oil storage tanks for the diesel and gas turbines.

DISCUSSION

- a. Cable Spreading Room. The cable vault is located at elevation 26'6" directly below the control room in the control building/radwaste building. The south wall separates the room with the reactor and turbine buildings and is composed of reinforced concrete with sections of solid concrete block of minimum thickness of 18 inches. The north and west walls are composed of 27 inch reinforced concrete or 18 inch solid concrete block. The north wall separates the room with the Unit 2 cable vault, the west with the turbine building. The east wall is an 18 inch thick reinforced concrete wall except at the interface with the stairwell which is 6 inch thick concrete block. The east wall separates the room with the back stairwell to the control room. The floor and ceiling are reinforced concrete 12 inches thick. Surrounding enclosures and physical location provide adequate protection.
- b. Diesel Generator Air Intake and Exhaust Vents. The intake and exhaust vents for the diesel generator are located at elevation 54.50' on the turbine building roof. It is improbable, that a tornado missile could jeopardize the operation of the diesel generator.
- c. Gas Turbine Air Intake and Exhaust Vents. The intake and exhaust vents for the gas turbine are located at elevation 41 feet on the Emergency Gas Turbine Building roof. As above, it is improbable that a tornado missile could jeopardize the operation of the emergency gas turbine.
- d. Essential Room Chillers and HVAC Systems. A complete review of ventilation systems will be finalized under SEP Topic IX-5. Pending the completion of this review, the control room is the only "essential" room required to achieve safe shutdown. The HVAC equipment for the MPI control room is located at elevation 42'6" in the turbine building directly west of the reactor building. The intake for the system is located on the turbine building roof directly overhead. Full protection against tornado missiles is not provided to the intake.

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MILLSTONE UNIT 1
ADDENDUM

- e. Diesel Generator. The emergency diesel generator is located at elevation 14.50' in the turbine building. The north, south, and west walls are 1 foot thick reinforced concrete block interior walls. The east wall is an exterior wall also composed of 1 foot thick block. (The walls were designed as three hour fire barriers.) The floor is a concrete slab at grade. The roof is a 6 inch reinforced concrete slab separating the room from the battery room above at elevation 34.50'. Adequate protection is provided.
- f. Condensate Booster Pumps. The condensate booster pumps, as well as the condensate pumps, are located at elevation 14'6" in the turbine building. The floor is a reinforced concrete slab. The east and north walls are composed of 4 inch concrete block. The west wall is composed of 8 inch and 6 inch concrete block. The south wall is 3 foot thick reinforced concrete except for a portion which consists of 3 foot thick concrete block (shield wall). The ceiling is a 6 inch concrete slab. To the north is Unit 2; to the east are portions of the turbine building to the radwaste/control building; to the south is the turbine building and machine shop area; to the west is a second 8 inch reinforced concrete block (exterior) wall. Above are the mezzanine and operating floor levels of the turbine building. Adequate protection is provided.
- g. Liquid and Gaseous Radwaste Systems. All liquid and gaseous radwaste systems are located in the radwaste building and/or underground from the building to the plant stack. The liquid radwaste building is a reinforced concrete structure located below grade to the east of the turbine building. Adequate protection is provided.
- h. Fuel Oil Storage Tanks for the Diesel and Gas Turbines. The fuel oil storage tanks are located below grade south of the plant and directly west of the gas turbine building. One 25,000 gallon diesel storage tank and two 25,000 gallon gas turbine oil storage tanks are located at center line elevation 4'3". Site grade at this area is 12'6". All tanks are 10'6" in diameter and covered by a minimum of 3 feet of compacted backfill or crushed stone.

REQUEST

Verify adequate tornado missile protection for the spent fuel pool cooling system or demonstrate an adequate alternate source of cooling.

DISCUSSION

All components of the spent fuel pool cooling system are located below elevation 82'9" in the reactor building. The building exterior walls are 18 inch reinforced concrete and provide adequate protection to the system.

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MILLSTONE UNIT 1
ADDENDUM

REQUEST

Resolve the contradiction between the FSAR and the August 31, 1981 submittal regarding the thickness of the intake structure roof.

DISCUSSION

The confusion in reporting roof thickness of the intake structure has resulted due to the pitch required for drainage. The roof varies from a minimum of 5 inches at a roof drain to 8 inches at the exterior walls. The bottom of the concrete slab is at elevation 41.33; the top of slab varies from elevation 41.75 to 42.00. For further details, see the following drawings included as applicable to this request.

25202-11034	Miscellaneous Buildings--Architectural Plumbing, Sheet 1
25202-11034	Miscellaneous Buildings--Architectural Plumbing, Sheet 2

CONCLUSIONS

Further to the conclusions reached in the SAR submitted earlier for this topic, the following discrepancies have been noted with respect to the original design criteria used to provide protection against tornado missiles and criteria that would currently be used.

- Diesel generator air intake and exhaust vents
- Gas turbine air intake and exhaust vents
- Control room HVAC system intake

The integrated assessment phase should evaluate the potential for both the diesel generator and gas turbine to be jeopardized during a tornado event accounting for considerations such as physical separation (approximately 100 feet). The need for providing any further protection should be evaluated accordingly.