

# 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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August 6, 1985

Docket No. 50-423  
B11558

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) W. G. Counsil letter to B. J. Youngblood, "Response to Question 260.58," dated April 3, 1985.

Dear Mr. Youngblood:

Millstone Nuclear Power Station, Unit No. 3  
Revised Response to Question 260.58

In Reference (1), Northeast Nuclear Energy Company (NNECO) provided a response to Question 260.58 concerning SER Open Item (19), "Q List." Attached is the revised response concerning "Q List." This revised response was discussed with and accepted by your Mr. J. Spraul, Quality Assurance Branch, and Ms. E. L. Doolittle, NRC Project Manager for Millstone 3, during telecons with NNECO representatives on May 16, May 24, and June 5, 1985. Therefore, SER Open Item 19 is considered fully resolved.

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

J. F. Opeka  
J. F. Opeka  
Senior Vice President


C. F. Sears  
By: C. F. Sears  
Vice President

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

Then personally appeared before me C. F. Sears, who being duly sworn, did state that he is 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, 1989

NRC Letter: December 19, 1984

Question No. Q260.58

Section 17.1.2.2 of the Standard Format (Regulatory Guide 1.70) requires the identification of safety-related structures, systems, and components controlled by the QA program. You are requested to supplement and clarify the Millstone 3 FSAR in accordance with the following:

- a. The following items do not appear on Table 3.2-1. Add the appropriate items to the table and commit to apply the pertinent QA program requirements to the remaining items during the operations phase or justify not doing so.
  1. Biological shielding within the fuel building, auxiliary building, and control building.
  2. Fabricated supports such as Unistrut or Superstrut that are used to support systems and components identified in Regulatory Guide 1.29.
  3. Items that are within the scope of Regulatory Position C.2 and C.3 of Regulatory Guide 1.29.
  4. Fuel assemblies.
  5. Control rods.
  6. Control rod drive mechanisms.
  7. Refueling machine.
  8. Spent fuel shipping cask trolley.
  9. Spent fuel assembly handling tool.
  10. Steam generator main steam flow restrictors.
  11. Vertical concrete seawall.
  12. Quarystone revetment adjacent to the intake structure.
  13. Station stack.
  14. Modifications to site grading (paving, roads, railroads, etc.).
  15. Modification to roofs of safety-related structures.
  16. Weld rod.
  17. Standby AC auxiliary power systems (Class 1E).

### MNPS-3 FSAR

- a. Diesel generator packages including auxiliaries (e.g., lube system, jacket cooling, air start system, governor, voltage regulator and excitation system).
- b. Instrumentation, control, and power cables (including underground cable system, cable splices, connectors and terminal blocks).
- c. Conduit and cable trays and their supports.<sup>(1)</sup>
- d. Valve operators.
- e. Protective relays and control panels.
- f. Electrical penetration for containment - vital and non-vital including primary and backup fault current protective devices.
- g. Emergency lighting battery packs.
- h. AC vital bus distribution equipment.

#### 18. DC Power Systems (Class 1E)

- a. Cables
  - b. Conduit, cable trays and their supports<sup>(1)</sup>
  - c. Battery racks
  - d. DC switchgear, distribution panels and protective relays.
- b. Page 2 of Table 3.2-1 shows the service water pump cubicles of the circulating and service water pumphouse as QA Category I. Expand this item to identify the associated structures, systems, and components under the control of the QA program.
- c. Attachment 1 of Northeast Utilities letter (Council to Youngblood) of March 22, 1984, addresses QA for certain TMI items identified in Enclosure 2 of NUREG-0737. This letter notes that "specific safety-related TMI items are included within their respective systems in FSAR Table 3.2-1." Provide a commitment that the items not listed in FSAR Table 3.2-1 but identified in Attachment 1 (enclosure 5.C) of your March 22, 1984 letter will be subject to the pertinent requirements of the FSAR operational QA program or justify not doing so.
- d. The Millstone 3 FSAR Section 9.5 and its reference to the "Fire Protection Evaluation Review" address QA for fire protection, but the commitments therein appear to address QA

during design and construction only. Revise the description of the QA program for fire protection to address the operations phase.

- e. Table 3.2-1 does not adequately identify specific ESF equipment used for the mitigation of radiological consequences in the event of a DBA. A specific example of this lack of definition can be found at the middle of page 16 of Table 3.2-1 which lists "Instrumentation and controls required to perform safety functions for QA Category I ventilation systems," without identifying these parts. This same approach holds true for Habitability Systems and Fuel Handling Systems. Clearly identify in Table 3.2-1 the items that are used for the mitigation of DBAs.
- f. In its letter to the NRC of March 22, 1984 (B11027), the applicant states that the Millstone 3 Health Physics Program will be subject to "an extensive internal audit program." Provide assurance that the auditors are independent of NU's Health Physics organization.

Response:

Structures, systems, and components which have been designed, procured, and constructed with QA control are identified in FSAR Section 3, Table 3.2-1 (QA Category I Structures, Systems, and Components). Table 3.2-1 will serve as input to the Category I material, equipment, and part list (MEPL) for Millstone 3. The MEPL will be generated and controlled in accordance with the Operational Quality Assurance Program as described in FSAR Section 17.2

Items added to Table 3.2-1 will be included in the MEPL when that document is generated.

a-1 Biological Shielding

Biological shielding in the safety-related structures are of reinforced concrete walls or panels and as such form part of the structure. Since the structures are safety-related and subject to corporate QA program requirements, the biological shielding will not be listed as a separate item in FSAR Table 3.2-1.

a-2 Fabricated Supports such as Unistrut or Superstrut

The fabricated supports such as unistrut or superstrut used to support Seismic Category I systems and components are part of the system or component. Since the operational QA program covers these systems and components, these fabricated supports will not be listed as a separate item in FSAR Table 3.2-1.

MNPS-3 FSAR

- a-3 Items that are within the Scope of Regulatory Positions C.2 and C.3 of Regulatory Guide 1.29

The seismic classification of Millstone 3 structures, systems, and components complies with Regulatory Guide 1.29. The structures, systems, and components designated Seismic Category I in accordance with Regulatory Guide 1.29 are listed in FSAR Table 3.2-1.

- a-4 Fuel Assemblies

FSAR Table 3.2-1 will be revised to include fuel assemblies under Reactor Coolant System.

- a-5 Control Rods

FSAR Table 3.2-1 will be revised to include control rods under Reactor Coolant System.

- a-6 Control Rod Drive Mechanisms

The control rod drive mechanism (CRDM) consists of four separate subassemblies. They are the pressure vessel, coil stack assembly, latch assembly, and the drive rod assembly. These assemblies will be listed in FSAR Table 3.2-1, except the coil stack assembly, which is not a Seismic Category I component.

- a-7 Refueling Machine

Portions of the refueling machine which hold fuel assemblies will be listed in FSAR Table 3.2-1.

- a-8 Spent Fuel Shipping Cask Trolley

FSAR Table 3.2-1 will be revised to include spent fuel shipping cask trolley under Fuel Handling System.

- a-9 Spent Fuel Assembly Handling Tool

FSAR Table 3.2-1 will be revised to include spent fuel assembly handling tool under Fuel Handling System.

- a-10 Steam Generator Main Steam Flow Restrictors

FSAR Table 3.2-1 will be revised to include steam generator main steam flow restrictors.

- a-11 Vertical Concrete Seawall

The west retaining wall is a Seismic Category I structure and will be listed in FSAR Table 3.2-1. The east retaining wall is not a Seismic Category I

structure and as such it will not be listed in FSAR Table 3.2-1.

a-12 Quarrystone Revetment Adjacent to the Intake Structure

The quarrystone revetment adjacent to the intake structure need not be listed in FSAR Table 3.2-1 as it is not a safety-related structure. FSAR Section 2.5.4.8.3.3 presents information which shows the revetment is not safety-related.

a-13 Station Stack

The station stack has been included in the MEPL for Millstone 1. The corporate QA program requirements are applied to this structure. It should not be included under Unit 3 on FSAR Table 3.2-1.

a-14 Modifications to Site Grading

Any future modifications to site grading would require a Plant Design Change Request (PDCR) which includes a formal safety evaluation. As such, modifications to site grading will not be included in FSAR Table 3.2-1.

a-15 Modifications to Roofs of Safety-Related Structures

Modification to roofs of safety-related structures are part of the safety-related structures already listed in FSAR Table 3.2-1 and need not be listed separately. Any modification requires a PDCR and its subsequent safety review.

a-16 Weld Rod

The specific consumable such as weld rods, when utilized in the safety-related systems, shall be included in those portions of Northeast Utilities Quality Assurance Program as applicable. Procurement of weld rods will be accomplished and controlled by Millstone 3 procedures.

a-17 Standby AC Auxiliary Power Systems (Class 1E)

a-17.a Diesel Generator Package Including Auxiliaries (e.g., Lube System, Jacket Cooling, Air Start System, Governor, Voltage Regulator, and Excitation System)

Emergency diesel generator, including auxiliaries, are included in FSAR Table 3.2-1 under Electrical Systems. Diesel generator fuel oil system, engine exhaust and combustion air, jacket water cooling, and air start systems are listed separately in FSAR Table 3.2-1. The



diesel generator lube oil system will be listed separately in FSAR Table 3.2-1.

a-17.b Instrumentation, Control, and Power Cables

FSAR Table 3.2-1 will be revised to include safety-related instrumentation, control, and power cables under Electrical Systems.

a-17.c Conduit and Cable Trays and their Supports

The trays, conduits, and ducts carrying safety-related wiring are listed in Table 3.2-1 under Electrical Systems. Other raceway installations whose failure during a seismic event may result in damage to any Class 1E or other safety-related system or component will not be listed in FSAR Table 3.2-1. Any future modifications to these raceways will require a PDCR which includes a formal safety evaluation. The design change process includes pertinent criteria of 10CFR50, Appendix B such as design review, construction, and inspection.

a-17.d Valve Operators

Those valve operators that are required to perform a safety function are qualified to Class 1E requirements, and are listed under Instrumentation and Control in FSAR Table 3.2-1 and shown in their respective system P&ID.

a-17.e Protective Relays and Control Panels

Safety-related protective relays and control panels are listed in FSAR Table 3.2-1 under Control Panel Boards.

a-17.f Electrical Penetrations of Containment - Non-vital, including Primary and Backup Fault Current Protection Devices

All electrical penetrations of the containment are Class 1E, and are listed in FSAR Table 3.2-1 under Structural Containment. Loads within the containment which are connected to safety-related buses and are not qualified to the containment accident environment have secondary (i.e., backup) penetration protection where the available fault current exceeds the current-carrying capabilities of the penetration conductor in addition to the normal circuit protection (i.e., primary penetration protection). Secondary penetration protection is provided by breakers, overcurrent relay, or fuses.



Where the available fault current exceeds the current-carrying capability of the penetration conductors for non-Class 1E circuits and for Class 1E circuits, secondary (i.e., backup) penetration protection is provided in addition to the normal circuit protection (i.e., primary penetration protection). These primary and backup fault current protection devices will be included in the MEPL for Millstone 3.

In a letter dated June 12, 1984, NNECo agreed to install backup protective devices for all circuits that pass through containment electric penetrations. These devices will be installed before full power operation following the first refueling outage (refer to Millstone SER, Page 8-25).

a-17.g Emergency Lighting Battery Packs

The emergency lighting battery packs are not Class 1E, but are seismically supported to prevent damage to safety-related equipment. FSAR Table 3.2-1 will be revised to include emergency lighting battery pack supports under Electrical Systems.

a-17.h AC Vital Bus Distribution Equipment

AC vital bus distribution equipment is included in FSAR Table 3.2-1 under Electrical Systems.

a-18 DC Power System (Class 1E)

a-18.a Cable

FSAR Table 3.2-1 will be revised to include Class 1E dc power system cables under Electrical Systems.

a-18.b Conduit, Cable Trays, and their Supports

Refer to the response to Item a-17.c.

a-18.c Battery Racks

The battery racks are considered an integral part of the Class 1E batteries and as such are not listed separately in FSAR Table 3.2-1 under Unit Batteries and Chargers (Electrical Systems).

a-18.d DC Switchgear, Distribution Panels, and Protective Relays

FSAR Table 3.2-1 will be revised to include Class 1E dc switchgear, distribution panels, and protective relays under Electrical Systems.

b. Service Water Pump Cubicles

The systems and components associated with service water pump (SWP) cubicles are listed in FSAR Table 3.2-1 (except SWP cubicle sump pump).

The SWP cubicles sump pumps were installed to remove leakage in the cubicles which results from maintenance of equipment or venting of piping. The sump pumps are not required to be Category I.

The service water system consists of redundant trains, one of which is required during any plant operating mode. Separation of the trains and safety-related motor control centers (MCC) is maintained in distinct watertight SWP cubicles. Service water piping within the cubicles is designed to Seismic Category I standards, with the exception of the service water pump packing leakoff drains, and is subjected to single failure criterion. Under the single failure criterion, it is only necessary to postulate the failure of a single service water train. Therefore, one train is considered operable, and one cubicle internally watertight.

Service water packing gland leakoff is a source of water accumulation in the pump cubicles. An internal water level of 4 inches or greater is a potential hazard for the MCCs. Normally, the cubicle sump pumps remove all leakage. In the event of sump pump failure, 4 inches of water in the cubicle would accumulate in 26 hours based on a seal leakage rate of 1 gpm. Operational procedures require monitoring of the pump cubicles on an 8-hour basis, providing adequate time for preventative action to be taken upon failure of a sump pump.

The design basis flood established for Millstone 3 is 23.8 feet msl. The walls of the SWP cubicles are protected from external flood to el 25.5 feet msl. SWP cubicle equipment access openings and roof ventilators are weatherproofed as stated in FSAR Section 3.4.1.7.

c. Certain TMI Items Identified in Enclosure 2 of NUREG-0737

TMI items that are part of NUREG-0737 are addressed in FSAR Section 1.10, Clarification of TMI Action Plan Requirements. All items identified in Attachment I (enclosure 5-C) of NUSCo's March 22, 1984 letter are included in FSAR Table 3.2-1 and will be subject to the pertinent requirements of the FSAR operational QA program.

d. Description of the QA Program for Fire Protection to Address the Operation Phase

Refer to revised FSAR Section 17.2 for the description of the QA program for fire protection during the operation phase of Millstone 3.

e. ESF Equipment used for the Mitigation of Radiological Consequences in the Event of a DBA

The engineered safety features (ESF) serve to mitigate the consequences of postulated events such as a loss-of-coolant accident (LOCA) and to protect the public by preventing or minimizing the release of fission products. The following ESF systems, each separate and independent, are provided to satisfy the functions indicated:

- Containment structure
- Containment depressurization system
  - Quench spray system
  - Containment recirculation system
- Emergency core cooling system
- Supplementary leak collection and release system (SLCRS)
- Containment isolation system
- Hydrogen recombiner system
- ESF filter system
  - Control room emergency ventilation system
  - Fuel building exhaust system
  - Charging pump, component cooling water pump, and heat exchanger ventilation system (part of auxiliary building filter system)

The above ESF systems are described in FSAR Chapter 6 and are listed in FSAR Table 3.2-1. FSAR Table 3.2-1 will be expanded to include major components of the SLCRS and ESF filter systems.

f. Health Physics Program

As discussed in FSAR Chapter 12, the Millstone 3 health physics program, including the necessary facilities and equipment, will be of high quality and meet the applicable Regulatory Guides and NUREGs. The program will be subject to its own quality controls, including an extensive internal audit program. These audits are conducted in accordance with NUSCo's Corporate Management Program for maintaining occupational exposure as low as reasonably achievable (ALARA). The health physics program is implemented by the personnel from the operating plant organization whereas the audit of the health physics program is performed by the personnel from NUSCo corporate headquarters in Berlin. However, the health physics program is not safety-related and hence, none of the items above should be included in FSAR Table 3.2-1 or be subject to the requirements of the operational QA program.

NOTE:

1. Raceway installations containing Class 1E cables and other raceway installations required to meet Seismic Category I requirements (those whose failure during a seismic event may result in damage to any Class 1E or other safety-related system or components).