

U.S. NUCLEAR REGULATORY
REGION I

Report Nos. 50-245/89-20
50-336/89-19
50-423/89-20

Docket Nos. 50-245
50-336
50-423

License Nos. DPR-61 Priority - Category C
DPR-65 Priority - Category C
NPF-49 Priority - Category C

Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, CT 06101-0270

Facility Name: Millstone Nuclear Power Station

Inspection At: Berlin, New London and Waterford, Connecticut

Inspection Dates: September 11 to 15, and October 2 and 5, 1989

Inspector: *C. G. Amato*
C. G. Amato, Emergency Preparedness Specialist,
Emergency Preparedness Section, FRSSB, DRSS

10/19/89
date

Approved by: *W. J. Lazarus*
W. J. Lazarus, Chief, Emergency Preparedness
Section, FRSSB, DRSS

10/24/89
date

Inspection Summary: Inspection on September 11 to 15, and October 2 and 5, 1989 (Combined Inspection Report Nos. 50-245/89-20, 50-336/89-19 and 50-423/89-20)

Areas Inspected: Routine, announced, safety inspection of the licensee's emergency preparedness program. The inspection included: changes to the emergency preparedness program; emergency facilities, equipment, instrumentation, and supplies; organization and management control; knowledge and performance of duties (training); independent reviews/audits; Emergency Action Levels; Protective Action Recommendations; off-site activities; dose assessment; and the security/emergency preparedness interface.

Results: No violations were identified. The licensee demonstrated ability to maintain and implement an acceptable emergency preparedness program.

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DETAILS

1.0 Persons Contacted

The following Northeast Nuclear Power Company (NNECO) and Northeast Utility Service Company (NUSCO) personnel attended the exit meeting.

W. Buch, Senior Nuclear Emergency Preparedness Coordinator, NUSCO
E. Berry, Shift Supervisor, Millstone Unit No. 1, NNECO
P. Capello-Bandzes, General Nuclear Training, Training Dept., NUSCO
T. Dembeck, Emergency Preparedness Coordinator, NUSCO
R. Harris, Director, Nuclear Engineering Department, NUSCO
H. Haynes, Station Services Superintendent, Millstone, NNECO
J. Kangley, Senior Engineer, Millstone Station, NNECO
J. Keenan, Superintendent, Millstone Unit No. 2, NNECO
R. Krammer, Shift Supervisor, Millstone Unit No. 1, NNECO
W. McCance, Senior Nuclear Emergency Preparedness Coordinator, NUSCO
E. Molloy, Supervisor, Emergency Preparedness, NUSCO
R. Rodgers, Manager, Radiological Assessment Branch, NUSCO
W. Romberg, Vice President, Nuclear Engineering and Operations
C. Sears, Vice President, Nuclear and Environmental Division
B. Tarallo, General Nuclear Training, Training Dept., NUSCO

The inspectors also observed the actions of, and interviewed other licensee personnel.

2.0 The Emergency Preparedness Program (EPP) Organization

The EPP organizational structure was reviewed, personnel were interviewed and EPP activities were identified to determine if the licensee has developed, maintains and implements an emergency preparedness program (EPP) required by 10 CFR 50.54(t) which meets the standards of 10 CFR 50.47(b) and Section IV of Appendix E to 10 CFR 50.

The staffing of the EPP organization and NUSCO management have not changed since the last inspection (refer to NRC RI Combined Inspection Report Nos. 50-245/88-15, 50-338/88-21, and 50-423/88-14). Management involvement at the station superintendent, department director and vice president levels continues. These managers actively review plans and procedures, maintain Emergency Response Organization (ERO) qualification, exercise oversight functions, resolve non-compliance issues raised during audits and reviews; receive and review significant event reports, and maintain interfaces with the State and towns governments. The pilot accident management program is supported by upper management. All Millstone superintendents are qualified as Director Station Emergency Operation. Unit superintendents are currently licensed senior reactor operators.

EPP is considered a central office program and not a site program. Two nuclear emergency coordinators are assigned to the site. The Senior Nuclear Emergency Preparedness Coordinator (SNEPC) is assigned 19 tasks by corporate administrative procedures including liaison with the Station Services Superintendent.

Based on the above review, this area is acceptable.

3.0 Emergency Preparedness Training (EPT)

EPT activities, training records, lesson plans, Emergency Response Organization (ERO) qualification roster, and the training matrix were reviewed, and Training Department (TD) staff interviewed in order to verify that emergency preparedness training is in compliance with 10 CFR 50.47(b)(15) and Section IV.F of Appendix E to 10 CFR 50.

The Nuclear Training Manual (NTM) has been approved. EPT is given in accordance with the policies and procedures of the NTM. A training matrix for EPT has been developed which correlates courses with ERO position. Lesson Plans are in place, examinations are given and training records retained for plant life. Ample Millstone Station staff have been trained for the ERO and the Corporate Emergency Operations Center positions. Reactor operators receive classroom EPT including simulator training in Emergency Action Level classification. Accident management training is still in the pilot stage and as such is not yet under the NTM. Two training drills a year are conducted in addition to the annual exercise. To enhance the effectiveness of this training, the licensee has developed a six year plan listing core exercise objectives.

Based on the above review, this area is acceptable.

4.0 Audits/Reviews

An independent review/audit is required at least every twelve months by 10 CFR 50.54(t) which includes determination for adequacy of the licensee State/local government interface and the availability of the results of the interface study to State government.

The audit/review required by 10 CFR 50.54(t) will be conducted during the fourth quarter of 1989. Procedures for conducting this review/audit are spelled out in Corporate Organization Nuclear Incidents (CONI) Procedure Manual 11.0.1, "EP Program Review". Adequacy of the State interface is determined annually. Results, including noncompliances and their resolution, must be distributed to management up to the senior vice president level.

CONI 11.0.1 has been revised so it explicitly delineates procedures for resolving noncompliances. This is done by discussion and agreement reached generally at the Station Superintendent level. However, if resolution is not reached at the station level, the issue is elevated up the management chain until resolution is reached. This chain will involve the Manager of the Radiological Assessment Branch (RAB). When EPP is audited, one section of the RAB audits another RAB section. If noncompliances arise involving the EPP, resolution of noncompliance issues will be resolved by the Nuclear Engineering Department Director and not the RAB manager. Technical Specification requirements for an EPP audit are met by the 50.54(t) audit/review. Contractor audits of selected EPP activities, particularly mathematical models and software, have been done.

Based on the above review, this area is acceptable.

5.0 Emergency Action Levels (EALs)

EALs were reviewed and discussed with reactor operators and Emergency Preparedness Department staff. This was done to determine if the EALs meet the standard of 10 CFR 50.47(b)(4), the requirements of Section IV.B of Appendix E to 10 CFR 50, the guidance of NRC Office of Inspection and Enforcement Information Notice No. 28 of 1983, and Planning Standard D and Appendix I to NUREG-0654.

The EAL tables have been human factor engineered and color coded. Symptoms, events, fission product barrier failure, and non-plant events are listed. Operators are trained by human factor engineering principles to determine an EAL by beginning with the highest classification, the General Emergency, and working down to lower classifications. The EALs have been discussed with the State of Connecticut. Emergency Operating Procedures contain referrals to emergency classification procedures.

The licensee is reviewing Unusual Events to identify those which might be more properly classified as non-emergency events reportable to the NRC per 10 CFR 50.72(b). If revisions are in order, they will be discussed with the NRC prior to submitting a revised table to the Plant Operating Review Committee. The State of Connecticut will also be advised of these changes. The licensee is considering adding as other conditions, an interfacing loss of coolant accident (Event V) and containment bypass to the Barrier Failure Reference Table. The inspector reviewed regulatory requirements with a number of licensee staff stressing the importance of meeting the requirements of 10 CFR 50.54(q) and 10 CFR 50.59, and formal submission to the NRC per 50.4(b)(5).

Based on the above review, this area is acceptable.

6.0 Protective Action Recommendations (PARs)

The standards and requirements for PARs are given in 10 CFR 50.47(b)(10) and Section IV.B of Appendix E to 10 CFR 50. Applicable guidance is found in NRC Information Notice 83-28. PARs were reviewed and discussed with licensee staff in order to verify that the standards and requirements are met and PARs are consistent with federal guidance.

PARs are predetermined using Connecticut's Posture Codes. As a result operators are not trained in PAR development. The extent of Protective Actions would be based in part on projected dose calculations. PARs have been reviewed with the State of Connecticut.

Based on the above review, this area is acceptable.

7.0 Plans and Procedures

The Emergency Plan (EP), Emergency Plan Implementing Procedures (EPIPs), and Corporate Organization for Nuclear Incidents (CONI) Procedure Manual were reviewed to determine if they meet the requirements of 10 CFR

50.47(b)(16) and 50.54(q), and the requirements of Section IV.G of Appendix E to 10 CFR 50.

Availability of these documents in each Emergency Response Facility (ERF) was checked on a sampling basis with particular attention given to procedures for classification, PAR development and notification. Current and approved copies of these documents were available in each ERF.

Section 5.1.2.a of the Emergency Plan tasks the Director of Station Emergency Operations (DSEO) with the command of station operations. Non-delegateable responsibilities include classification and Protective Action Recommendations (PARs). However, neither this section, nor section 5.1.2.e, Manager of Radiological Dose Assessment, indicates that PARs are a primary responsibility of the DSEO if the Corporate Emergency Operations Center (CEOC) is not activated.

Section 5.2.1.a of the plan tasks the Director of Corporate Emergency Operations (DCEO) with the command of the utility response with responsibilities to support the DSEO in regards to station operations. CONI procedure 1.02, Corporate Organization for Nuclear Incidents, tasks the DCEO with responsibility for command of both utility and station operations.

The Emergency Plan and CONI 1.02 should be reconciled to clearly show who is in charge of station operations, as well as to clarify the responsibilities for PAR formulation, particularly prior to CEOC activation. This is an Inspector Followup Item (IFI) (50-245/89-20-01, 50-336/89-19-01 and 50-423/89-20-01). This item will be reviewed in a subsequent inspection.

Except as noted above, this area is acceptable.

8.0 Emergency Response Facilities (ERFs)

ERFs are designed to meet the requirements of 10 CFR 50.47(b)(8) and (b)(9), Section IV of Appendix E to 10 CFR 50, Supplement 1 to NUREG-0737 and Regulatory Guide 1.97. Equipment, status boards, communications systems, plans, procedures, habitability and access control provisions were checked for the control room (CR), Technical Support Center (TSC), Operations Support Centers (OSCs), the Emergency Operations Facility (EOF), and the Corporate Emergency Operations Center (CEOC).

Status boards, maps, facility diagrams, plans, procedures, drawings, and equipment were in place and maintained, equipment was within the prescribed calibration period and functional, and communication equipment operative at all ERFs. Portable computers used to calculate projected doses were properly stored and operative.

The licensee is evaluating using the simulator to conduct future exercises. The inspector indicated that the NRC encourages the use of simulators for this purpose due to the more effective training for operators.

Based on the above review, this area is acceptable.

9.0 Notification and Communication

Communication systems were reviewed to determine if the requirements of 10 CFR 50.47(b)(5) and (b)(6), Sections IV.D.1 and E.9 of Appendix E to 10 CFR 50, and NRC Information Notice 86-97 were met.

A check of communication systems in the ERFs showed independent, redundant and diverse communication systems are in place and functional. These include the NRC ENS and Health Physics Network (HPN) telephones, commercial telephone lines, a microwave link to the Connecticut Valley Power Dispatcher, radios for security, in-plant teams and on and off-site monitoring teams. In addition, there is rapid facsimile and data hard copy capability. These systems, in addition to linking the ERFs, also provide connections to the Connecticut State Police, the Connecticut Department of Environmental Protection and the Northeast Utilities work station in the State EOC. Telephone lines from the plant are supplemented by two microwave systems having 116 channel analog and digital capacity. A fiber optics line connects the site and the EOF. Another fiber optics line runs from the EOF to the phone company's New London Central Office(s).

Northeast Utilities owns and operates the pager call-in system which is tested daily. The present system is being replaced by a computerized system which is scheduled for on-line operation early next year. The present and future system activates pagers carried by licensees, Connecticut State government and Town government personnel assigned to emergency response duty. The pagers may be selectively activated.

A number of site personnel have been qualified for the ERO position Manager of Communications (MOC). The MOC will be responsible for all forms of Emergency Communications among ERFs and off-site. This includes ENS and the NRC HPN phones. The MOC will be supported by Technical Information Communicators (TICs). TICs are technically and professionally qualified to man the ENS and HPN phones. Terminals for the Safety Parameter Display System and the Off-Site Information System (OFIS) are in place. OFIS will replace the Nuclear Emergency Status System (NESS) which is being phased out.

Based on the above review, this area is acceptable.

10.0 Off Site Activities

Correspondence, documentation and records were reviewed to determine if the standards of 10 CFR 50.47(b)(5) and (b)(12) and the requirements of Section IV.D.3 and IV.F of Appendix E to 10 CFR 50 are met.

Siren availability during 1988 was 97%. Emergency Action Levels and Protective Action Recommendations were discussed with government officials. Medical, health physics, radiation monitoring and communication drills were run with State and Town personnel. Training was also given to these personnel. A letter certifying these activities and siren availability has been sent to FEMA Region I by the State of Connecticut Office of

Emergency Management on January 27, 1989.

Evacuation Time Estimates will be updated when 1990 census data is available. All but one Letter of Agreement are current and that letter was under revision during the inspection period. Medical Training for support hospital personnel will be given in the fall. Volunteer Fire Company members have been trained by Northeast's Fire Training Center staff.

The Radiation Emergency Area (REA) of the support hospital was inspected. The Lawrence & Memorial Hospital in New London is the Millstone Station support hospital, the back up hospital for the Haddam Neck Plant and the FEMA designated MS-1 hospital. This REA also serves two other organizations in this area of Connecticut. The outpatient area of the Emergency Department (ED) will be dedicated to treating injured/contaminated personnel on arrival. Access to this area will be controlled by the hospital security force. There is direct access to the decontamination radiation treatment room which can accommodate four to seven patients. Eighteen physicians and 45 nurses comprise the staff of the ED. In addition, hospital staff specialists are on-call. All ED physicians, an Emergency Medical Services Coordinator, the Chief Emergency Medical Technician (EMT) and four Charge Nurses have received training at the Oak Ridge REAC/TS. On-call Paramedics, from the licensee staff, would go to the Millstone Site or intercept the ambulance en-route. The Control Room (CR) can maintain radio contact with the ambulance using a CR radio and the TRI-Town Emergency Radio. Survey equipment was available, operable and within calibration. Supplies and inventory matched. Every Hospital Department has a copy of Section II of the Emergency Plan, "Radiation Injuries". Helicopter service is available to transport overexposed and other patients with contaminated injuries to the Yale Hospital as needed.

Based on the above review, this area is acceptable.

11.0 Public Information

The Nuclear Information Program Coordinator was interviewed, and distributed public information material was reviewed to determine if the requirements of 10 CFR 50.47(b)(7) and Section IV.D.2 of Appendix E to 10 CFR 50 are met.

Inserts have been placed in the telephone directories for the communities within the ten mile emergency planning zone (EPZ). Brochures or calendars will be mailed to all households within the EPZ. Information booklets for farmers and transients have been distributed. Media training will be given in the fall in conjunction with a wire service meeting. The media information packet is current.

Based on the above review, this area is acceptable.

12.0 Dose Assessment

The standards, requirements, and guidance for dose assessment are given in 10 CFR 50.47(b)(9), Sections IV.B and IV.E. of Appendix E to 10 CFR 50, Section II.f.1(2) of NUREG 0737 (Supplement 1), Regulatory Guides 1.23 and 1.97, and NUREG-0654, Rev. 1, Appendix 2. Facilities were inspected, records were reviewed and personnel interviewed to verify that these requirements were met.

Calibration data for the containment high range monitors and vent monitors which would monitor a release under emergency conditions were checked. Records indicated these monitors were within the calibration period specified in the facility Technical Specification. Records for the meteorological tower sensors was also reviewed and these sensors determined to be in calibration. Field team procedures for iodine collection now reflect a basis document. Collection time minimizes field team dose while samples are collected and meet statistical performance and sensitivity specification. Default iodine/noble gas ratios for an unfiltered release are specified. The value is in agreement with that given in NUREG-1210 for primary loop activity. The licensee will review the desirability of adding the temperature ranges given in A.3 of the Barrier Failure Reference Table (in EPIP 4701) to CONI and site dose assessment procedures. The licensee indicated that they will also consider adding the source term-temperature correlation given in Figure 1.2 of NUREG-1210, Vol. 2. These additions will prompt dose assessors to consider temperature as an index of possible fission product release models.

Five programs are available to assess dose including PFAD-RAG (deposition and ingestion dose commitment) and EPA's Air-Rem. The default release duration in use is ten hours. The licensee agreed to review the basis for this time and consider shorter values for default release durations.

Based on the above review, this area is acceptable.

13.0 Security-Emergency Preparedness Interface

To determine if an acceptable Security-Emergency Preparedness interface is in place, Section II.D.59 of Appendix B to 10 CFR 73 and NUREG/CR-3251 were consulted, and security personnel were interviewed.

The Security force coordinates emergency response activities with the control room (CR), and provides the CR with 10 CFR 73.71 notification information. Informal meetings are held between security, emergency preparedness (EP) and operations, but these are not considered coordination meetings and documentation of discussions is not developed. The licensee will consider strengthening the security-EP interface and succinctly document topics discussed during coordination meetings.

Based on the above review, this area is acceptable.

14.0 Response to Actual Unusual Events

Documentation associated with actual classifications was reviewed to determine if the licensee's actions were in compliance with 10 CFR 50.47(b)(4) and (5), and the requirements of Sections IV.B and F of Appendix E to 10 CFR 50.

Plant Incident Reports for the Millstone units were reviewed. A number of events were classified correctly including some in accordance with the Connecticut State Posture Code Echo (general interest). On two occasions involving Unit 2, uncertainty as to classification or reporting requirements was noted. Both events involved Diesel Electric Generators (DEGs) being declared inoperative and a Technical Specification Action Statement being entered. On each occasion Unit 2 was operating in Mode 1 and two connections to other AC supplies were available (back up to the grid and Units 1 and 3). The Operators consulted Emergency Plan Implementing Procedure-4701, "Unit Assessment, Classification, and Reportability". They concluded the Unit was in a Technical Specification Action Statement and made a report to the NRC per 10 CFR 50.72(b). During one of these situations the DEGs were idling but were not loaded. During the second event, a malfunctioning meter was believed to be the cause. Shut down was not required. The inspector concurred with the decisions regarding classification.

The inspector reviewed the associated Lesson Plans, interviewed the trainer and a training simulator instructor, reviewed the Classification Tables (CT) and licensee proposed changes to these and concluded clarification is needed. Key conditions have a list of symptoms and events listed in separate but parallel columns. Confusion arose as to which column to use. To avoid a repetition, the licensee will replace "symptom" with "EAL" in the CTs. Other changes will be made not associated with these events. The revised CTs will be submitted to the NRC for review and approval before implementation.

The inspector had no further questions in this area.

15.0 Exit Meeting

An exit meeting was held with the licensee personnel identified in Section 1 of this report. The licensee was advised no violations were identified. Licensee management acknowledged the findings as identified in this report and indicated they would evaluate them and take appropriate corrective action where necessary.

At no time during the course of the inspection did the inspector provide any written material to the licensee.