

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report Nos. 50-245/89-81  
50-336/89-81  
50-423/89-81

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, Connecticut 06101-0270

Facility Name: Millstone Nuclear Power Station

Inspection At: Berlin and Waterford, Connecticut

Inspection Dates: October 3-5, 1989

Inspectors:

C. G. Amato  
C. G. Amato, Emergency Preparedness Specialist,  
Emergency Preparedness Section, FRSSB, DRSS

9/1 Oct 1989  
date

C. Conklin, Sr. EPS, EPS, FRSSB, DRSS  
C. Gordon, EPS, EPS, FRSSB, DRSS  
P. Habighorst, RI, Millstone  
G. Bethke, Comex, Inc.

Approved by:

W. J. Lazarus  
W. J. Lazarus, Chief, Emergency Preparedness  
Section, FRSSB, DRSS

11/2/89  
date

Inspection Summary: Inspection on October 3-5, 1989 (Combined Inspection Report Nos. 50-245/89-81, 50-336/89-81 and 50-423/89-81)

Areas Inspected: Routine, announced, inspection of the licensee's partial-participation emergency exercise conducted on October 3-5, 1989. The State of Connecticut and several towns participated for training. NRC Executive, Base and Site teams participated.

Results: No violations were identified. Emergency response actions were adequate to provide protective measures for the health and safety of the public.

8911150255 891106  
PDR ADOCK 05000245  
PDC  
Q

## 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  
R. Harris, Director, Nuclear Engineering Department, NUSCO  
H. Haynes, Station Services Superintendent, Millstone Station, 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. Rogers, Manager, Radiological Assessment Branch, NUSCO  
W. Romberg, Vice President, Nuclear Engineering and Operations  
C. Sears, Vice President, Nuclear and Environmental Division

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

### 2.0 Emergency Exercise

The Millstone Nuclear Power Station announced, partial- participation exercise was conducted on October 4, 1989, from 7:00 a.m. to 3:00 p.m. The State of Connecticut and several Towns participated.

#### 2.1 Pre-exercise Activities

The exercise objectives submitted to NRC Region I on June 26, 1989 were reviewed and, following minimum revision, determined to be adequate to test the licensee's Emergency Plan. On July 28, 1989, the licensee submitted the complete scenario package for NRC review and evaluation. Region I representatives had telephone conversations with the licensee's emergency preparedness staff to discuss the scope and content of the scenario. As a result, minor revisions were made to the scenario which allowed adequate testing of the major portions of the Millstone Station Emergency Plan and Procedures and also provided the opportunity for the licensee to demonstrate those areas previously identified by the NRC as in need of corrective action. NRC observers attended a licensee briefing on October 3, 1989. Suggested NRC changes to the scenario made by the licensee were discussed during the briefing. The licensee stated that certain emergency response activities would be simulated and that controllers would intercede in exercise activities to prevent disruption of normal plant activities.

## 2.2 Exercise Scenario

The exercise scenario included the following events:

1. Main generator is disconnected from the grid, and load is reduced;
2. Main Steam Isolation Valves (MSIVs) close and then fail to reopen due to loss of MSIV control;
3. Scram signal initiates, but rods fail to insert due to water in the scram instrument volume;
4. Loss of Stand- by Liquid Control system pumps;
5. Heat removal accomplished using the isolation condenser and blow- down to the torus;
6. Minor fuel clad damage;
7. Heating and boiling of torus water;
8. Pressurization of the primary containment;
9. Torus venting via the main stack;
10. Release of radioactive material to the environment via the Reactor Building and Unit 1 stack;
11. Restoration of the Stand- By Liquid Control System pump;
12. Boron injection and reactor shut down; and,
13. Reduction of primary containment pressure and release termination.

## 2.3 Activities Observed

During the conduct of the licensee's exercise, NRC team members made detailed observations of the activation and augmentation of the Emergency Response Facilities (ERFs) and the Emergency Response Organization (ERO) staff and actions of ERO staff during operation of the ERFs. The following activities were observed:

1. Detection, classification, and assessment of scenario events;
2. Direction and coordination of emergency response;
3. Augmentation of the emergency organization and response facility activation;

4. Notification of licensee personnel and off-site agencies of pertinent plant status information;
5. Communications/information flow, and record keeping;
6. Assessment and projection of off-site radiological dose and consideration of protective actions; and,
7. Engineering analysis of accident mitigation approaches.

### 3.0 Classification of Exercise Findings

Emergency Preparedness exercise findings are classified as follows:

#### Exercise Strengths

Exercise strengths are areas of the licensee's response that provide strong positive indication of their ability to cope with abnormal plant conditions and implement the emergency plan.

#### Exercise Weaknesses

Exercise weaknesses are areas of the licensee's response in which the performance was such that it could have precluded effective implementation of the emergency plan in the event of an actual emergency in the area being observed. Existence of an exercise weakness does not of itself indicate that overall response was inadequate to protect the health and safety of the public.

#### Areas for Improvement

An area for improvement is an area which did not have a significant negative impact on the ability to implement the emergency plan and response was adequate. However, it should be evaluated by the licensee to determine if corrective action could improve performance.

### 4.0 Exercise Observations

The inspectors observed licensee response actions in the emergency response facilities.

#### Control Room

The following exercise strengths were identified.

1. The operators effectively implemented Emergency Operating Procedures through the exercise.
2. Probable success paths were identified.
3. There was timely, on-going and effective communication between the Shift Supervisor and the Director Station Emergency Operations.

4. Early consideration was given to containment venting.
5. The Senior Shift Supervisor Staff Assistant regularly updated the Shift Supervisor as to classification and response of off site facilities.
6. There was good interaction between the NRC, Resident Inspectors Duty Officer, Shift Supervisor and the Senior Control Operator.

No exercise weaknesses were identified.

One area for improvement was called to the licensee's attention.

1. Prioritization of support activities for Auxiliary Operators was confusing.

#### Technical Support Center (TSC)

The following exercise strength was identified.

1. The TSC exercise controller was very knowledgeable and effectively controlled TSC activities.

No exercise weaknesses were identified.

Three areas for improvement were called to the licensee's attention.

1. There was a lack of strong command and control with respect to direction, priorities and tracking.
2. Communication from other Emergency response Facilities could be improved. The TSC staff was not aware a General Emergency-Alpha had been declared for about an hour and a half.
3. TSC staffing would have been improved by supplementing staff with more Unit-1 personnel.

#### Operational Support Center (OSC)

The following exercise strengths were identified.

1. There were good OSC team briefings.
2. Log book entries were detailed.

No exercise weaknesses were identified.

The following area for improvement was identified.

At times awareness and tracking of Auxiliary Operators and OSC teams entering the plant was less than desirable. Time of entry and return, mission, and task results were not well tracked within and among ERFs.

### Emergency Operations Facility (EOF)

The following exercise strengths were identified.

1. There was excellent command and control and frequent staff briefings by the Director Station Emergency Operations (DSEO).
2. The EOF staff was aware of the status of the unaffected units, site and environmental conditions and protection of in plant staff.
3. The Technical Assistant to the DSEO effectively used Emergency Operating Procedures.
4. Classification and Protective Action Recommendations were well reasoned, prompt and conservative.
5. There was good interaction with the NRC Site Team.
6. The EOF deployed a marine Environmental Monitoring Team.

No exercise weaknesses were identified.

The following areas for improvement were identified.

1. The DSEO did not advise the EOF staff for 20 minutes that he had assumed command and control.
2. The Senior Shift Supervisor acting as the DSEO did not order assembly/site evacuation at the Site Area Emergency per EPIP 4010 B. This procedure allows flexibility if other hazards are present. However, hazards were not present and assembly should have been ordered.
3. The Manager of Radiological Dose Assessment calculated projected doses assuming venting via the Stand-by Gas Treatment System and not via the reactor building and main stack (dose values for both cases would have been the same for this scenario).

### Corporate Emergency Operation Center (CEOC)

The following strengths were identified.

1. There was good interaction with the NRC. An open phone line was maintained with the NRC Executive and Base Teams including briefings of NRC Executives and Managers.
2. There was frequent and timely feed-back by the licensee's liaison officers at the Connecticut State Emergency Operations Center.
3. Effective radio communication and control of Environmental Monitoring Teams was maintained.

4. Proactive, on-going and aggressive response was demonstrated by the Technical Support group including consideration of alternates and worst cases.
5. Frequent and in depth managers meetings.

No exercise weaknesses were identified.

The following areas for improvement were identified.

1. The Director Corporate Emergency Operations did not brief the CEOC staff as to plant status and off site response. Instead, he relied on status board postings to convey this information.
2. The status of the unaffected units was not displayed.

#### 5.0 Licensee Critique

The NRC team attended the licensee's exercise critique on October 4, 1989 during which the licensee's lead controllers discussed observations of the exercise. The licensee's critique was critical and thorough. The licensee indicated that these observations would be evaluated and appropriate corrective actions taken.

#### 6.0 Exit Meeting

Following the licensee's self critique, the NRC team met with the licensee's representatives listed in Section 1 to discuss findings as detailed in this report.

The NRC team leader summarized the observations made during the exercise. The licensee was advised no violations or exercise weaknesses were identified and the previously identified exercise weakness was adequately addressed. Although areas for improvement were identified, the NRC team determined that within the scope and limitations of the scenario, the licensee's performance demonstrated they could implement their Emergency Plan and Emergency Plan Implementing Procedures in a manner that would adequately provide protective measures for the health and safety of the public.

At no time during the course of the inspection did the inspectors provide any written information to the licensee.