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U. S. Nuclear Regulatory Commission
Region I

Docket/Report No.: 50-443/92-10 License: NPF-86

Licensee: Public Service Company of New Hampshire
New Hampshire Yankee Division
Seabrook, New Hampshire 03874-0300

Facility: Seabrook Station, Unit 1

Dates: June 3 - 5, 1992

Inspection At: Seabrook and Newington, New Hampshire

Inspectors: Craig E. Gordon 7/15/92
J. Laughlin, EP Specialist date

J. Lusher, EP Specialist
J. Prell, Operations Engineer
E. Fox, NRR/PEPB
N. Dudley, SRI Seabrook
W. Olsen, RI, Maine Yankee

Approved: Ebe C. McCabe 7/15/92
E. McCabe, Chief, Emergency Preparedness Section, Division of Radiation Safety and Safeguards date

Scope

Announced safety inspection and observation of the emergency preparedness full-participation exercise.

Results

The licensee demonstrated the ability to protect public health and safety. Exercise strengths included effective command and control in all Emergency Response Facilities, staff interactions in diagnosing and mitigating accident conditions, and maintenance team deployment. There were no exercise weaknesses. Areas for improvement included communications between the Technical Support Center (TSC) and Operations Support Center (OSC) team leaders early in the exercise, maintenance response to loss-of-power situations, and maintenance of emergency equipment in the OSC.

DETAILS

1.0 Persons Contacted

The following licensee personnel attended the exit meeting held on June 5, 1992:

R. Badger, Facilities Supervisor
R. Boyd, Jr., Budget Control Services
A. Callendrello, Licensing Manager
P. Casey, EP Drill Supervisor
W. DiProfio, Station Manager
R. Donald, Auditor
B. Drawbridge, Executive Director, Nuclear Production
S. Ellis, Site Services Manager
G. Gram, Executive Director, Support Services
T. Grew, Technical Training Manager
J. Grillo, Operations Manager
J. Linville, Chemistry Department Supervisor
J. Peschel, Regulatory Compliance Manager
N. Pillsbury, Director, Quality Programs
T. Pucko, NRC Coordinator
G. Sessler, Senior Project Engineer
R. Sher, Emergency News Manager
P. Stroup, Director, EP
D. Tailleart, EP Manager
R. Thompson, Training Supervisor
D. Young, EP Plans and Procedures Supervisor

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

2.0 Emergency Exercise

A Seabrook Station full-participation exercise was conducted on June 4, 1992, from 8:00 a.m. until 3:30 p.m. The State of New Hampshire and the Commonwealth of Massachusetts participated fully in the exercise and were evaluated by the Federal Emergency Management Agency. The State of Maine partially participated by providing representatives to the Emergency Operations Facility.

2.1 Pre-exercise Activities

Exercise objectives were submitted to NRC Region I on February 28, 1992. The on-site portion of the exercise scenario was submitted for review on April 1, 1992, and the New Hampshire and Massachusetts portions were submitted for information on April 15, 1992. NRC review and telephone discussions with the licensee resulted in some minor scenario revisions. The final scenario was found to be an adequate test of the licensee's Emergency Plan and Implementing Procedures.

The NRC inspection team attended a licensee briefing on June 3, 1992 and participated in a discussion of expected response actions and scenario management issues particular to the Seabrook site. These were clearly explained to the satisfaction of the inspectors.

2.2 Exercise Scenario

The scenario included the following simulated events:

- Positive displacement charging pump, Containment Building Spray Train 'A', and Emergency Diesel Generator EDG-1B tagged out for maintenance;
- Small plane crash into switchyard transformers, resulting in loss of off-site power and reactor scram;
- Trip of EDG-1A and consequent station blackout (SBO);
- Reactor coolant system (RCS) Loop "B" cold leg rupture, resulting in a large break loss of coolant accident (LOCA);
- Loss of containment integrity through a flaw in Penetration X-11, which allowed containment leakage to the containment enclosure area;
- EDG-1A returned to service, starting Train "A" enclosure area exhaust fan and initiating an elevated release from the plant stack;
- Alert, Site Area Emergency, and General Emergency declarations;
- Protective Action Recommendations (PARs) to off-site authorities.

2.3 Activities Observed

The NRC inspection team observed the activation and augmentation of the Emergency Response Facilities (ERFs) and actions of the Emergency Response Organization (ERO). The following activities were observed:

- Use of operations and emergency plan implementing procedures;
- Detection, classification, and assessment of scenario events;
- Direction and coordination of emergency response;
- Notification of licensee personnel and off-site agencies;

- Communications/information flow, and record keeping;
- Assessment and projection of off-site radiological dose, and consideration of protective actions;
- Provisions for communicating information to the public;
- Accident analysis and mitigation;
- Post-exercise critique by the licensee.

2.4 Exercise Finding Classifications

Exercise findings were classified as follows:

Exercise Strength: a strong positive indicator of the licensee's ability to cope with abnormal plant conditions and implement the Emergency Plan.

Exercise Weakness: less than effective Emergency Plan implementation which does not, alone, constitute overall response inadequacy.

Area for Improvement: an aspect which does not significantly detract from the licensee's response, but which merits licensee evaluation for corrective action.

2.5 Exercise Observations

The NRC team noted that the activation and utilization of the Emergency Response Organization (ERO) and Emergency Response Facilities (ERFs) were generally consistent with the Emergency Plan and Emergency Plan Implementing Procedures. The following exercise observations were made in the ERFs.

Simulator Control Room (SCR)

Command and control in the SCR was good. The controllers did an effective job in adjusting the scenario to follow the planned time-line.

No exercise strengths, weaknesses, or areas for improvement were identified.

Technical Support Center (TSC)

The Site Emergency Director (SED) maintained good command and control through periodic briefings and prioritized work assignments. Engineers effectively addressed several operational problems including actions to repair the EDG-1A breaker following trip and SBO, installation of a portable diesel-generator while in SBO, and

consideration of injecting fire main water into the Reactor Coolant System for core cooling following the LOCA.

No exercise strengths or weaknesses were identified.

Area for improvement:

- Initially, communications between the SED and Operational Support Center (OSC) team leaders were slow, resulting in the delay of some repair items.

Operational Support Center (OSC)

Exercise strengths:

- The OSC Coordinator exercised positive control of maintenance teams through effective briefings. Also, team composition was effective, utilizing well experienced personnel.

- The maintenance team dispatched to investigate the trip of EDG-1A demonstrated effective problem-solving ability while deployed. The three-man team provided thorough evaluation of the breaker damage, then discussed and formulated a constructive plan to repair it.

- Health physics (HP) coordination of field teams was excellent. The HP technician researched each job to ensure that doses would be as low as reasonably achievable (ALARA). HP briefings thoroughly covered expected dose rates, stay times, hot spots, and ways to reduce exposure.

No exercise weaknesses were identified.

Areas for improvement:

- OSC personnel did not consider return to service of EDG-1B following loss of off-site power and return to service of EDG-1A during SBO as high priority tasks. That delayed maintenance team deployment for diesel-generator repairs.

- Some emergency equipment was not maintained in proper working order. Examples observed included broken telephone plugs, and inoperable radios and lanterns.

Emergency Operations Facility (EOF)

Exercise strengths:

- The Response Manager (RM) displayed excellent command and control through regular briefings and manager meetings.

- The EOF staff was proactive and effective in accident mitigation assistance by postulating system failures based on present plant conditions and formulating proper solutions, providing good correlation between RCS leakage volume and pipe size, and advising on the long-term availability of electrical power.

- Communications with representatives of the Commonwealth of Massachusetts and the States of New Hampshire and Maine were complete as demonstrated by regular briefings and constant interaction among both staffs at several organizational levels.

No exercise weaknesses or areas for improvement were identified.

3.0 Licensee Action on Previously Identified Items

Two areas were identified for potential improvement during the 1991 exercise:

1. Review of the responsibilities of the NHY staff member processing inhalation pathway samples to ensure that activities which might unnecessarily impede performance are assigned to other response personnel.

   During this exercise, overall dose assessment performance was excellent, demonstrating that the function involved was acceptably performed.

2. Consider streamlining the processing of inhalation pathway samples by restricting concerns to iodine and noble gas concentrations.

   The licensee has concentrated inhalation pathway sampling on iodine and noble gasses. Associated performance was acceptable during the exercise.

Based on the above, these potential improvement items have been satisfactorily resolved.

4.0 Licensee Critique

The NRC team attended the licensee's exercise critique on June 5, 1992. The supervisor of EP Plans and Procedures summarized the licensee's observations from the exercise. Good self analysis was evident in licensee identification of two areas for improvement which were not identified by the NRC observers. Also, there was valid licensee emphasis on strengths and examples of good performance. It did not appear, however, that there was correspondingly strong and positive attention at the critique to aspects which could be improved, as demonstrated by the additional areas for improvement noted by the inspection team.

5.0 Exit Meeting

Following the licensee's critique, the NRC team met with the licensee representatives listed in Detail 1.0 of this report. The team leader summarized the NRC observations. The licensee was informed of the NRC's preliminary findings that no exercise weaknesses were identified and that licensee performance demonstrated the ability to implement the Emergency Plan and Emergency Plan Implementing Procedures in a manner that would provide adequate protection of public health and safety. Licensee management acknowledged the findings and indicated that they would evaluate the NRC findings and take corrective action where appropriate.