U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-443/89-10

Docket No. 50-443

License No. CPPR-135 Priority -- Category C

Licensee: Public Service Co. of New Hampshire
P.O. Box 330
Manchester, New Hampshire 03105

Facility Name: Seabrook Station

Inspection At: Seabrook, New Hampshire

Inspection Conducted: September 26-28, 1989

Inspectors: RJ Summers for 10/2/89
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Inspection Summary: Inspection on September 26-28, 1989 (Report No. 50-443/89-10)

Areas Inspected: Routine, announced emergency preparedness inspection and observation of the licensee's partial-participation annual emergency preparedness exercise conducted on September 27, 1989. The inspection was performed by a team of five NRC Region I and headquarters personnel.

Results: No violations, deviations or unresolved items were identified. The licensee's response actions for this exercise demonstrated the ability to implement the emergency plan in a manner which would provide adequate protective measures for the health and safety of the public.

DETAILS

1.0 Persons Contacted

The following licensee representatives attended the exit meeting held on September 28, 1989.

S. Buchwald, Quality Assurance Supervisor
R. Boyd, Jr., Performance Services Manager
E. Brown, President
A. Callendrello, Manager, Emergency Planning Licensing
P. Casey, Senior Emergency Planner
E. Desmarais, Independent Review Team Manager
B. Drawbridge, Executive Director Nuclear Production
J. Ellis, Manager, Response and Implementation
T. Feigenbaum, Chief Operating Officer and Sr Vice President
T. Grew, Manager, Specialty Training
J. Grillo, Operations Manager
T. Harpster, Director, Licensing Services
J. MacDonald, Radiological Technical Specialist
J. Martin, Manager, Community Relations
D. McLain, Production Services Manager
D. Moody, Station Manager
P. Richardson, Manager, Training
N. Pillsbury, Director, Quality Programs
P. Stroup, Director, Emergency Implementation and Response
W. Sturgeon, Nuclear Services Manager
R. Sweeny, Bethesda Licensing Office Manager
D. Tailleart, Emergency Preparedness Manager
J. Tefft, Lead Engineer
R. Winn, Director, Corporate Communications

During the conduct of the inspection, other licensee emergency response personnel were interviewed and observed.

2.0 Emergency Exercise

The Seabrook Station partial-participation exercise of the licensee's on-site Emergency Plan was conducted on September 27, 1989, from 8:00 a.m. until 3:30 p.m. FEMA did not observe. There was limited off-site participation of State of New Hampshire Incident Field Office (IFO) and the licensee's Off-site Response Organization (ORO) to test the interface with the licensee's on-site emergency response personnel.

2.1 Pre-exercise Activities

The exercise objectives submitted to the NRC Region I on June 30, 1989 were reviewed and determined to adequately test the licensee's Emergency Plan. On July 27, 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 scenarios. As a result, minor revisions were made to the scenario and supporting data provided by the licensee. As this was a partial-participation exercise, it was not necessary to demonstrate off-site

protective actions. It was determined that the scenario would support an adequate partial-participation exercise of the licensee's Emergency Plan and Implementing Procedures. The scenario involved a loss-of-coolant accident which would result in declaration of a Site Area Emergency and would test the licensee's on-site emergency response facilities including the functions of dose assessment, protective action decision-making, and the interface with the State of New Hampshire officials and the ORO, which compensates for the lack of participation by the Commonwealth of Massachusetts. Although a major release of radioactivity was not included in the scenario, the existence of the potential for such a release would force the demonstration of the major areas of the licensee's emergency response organization. NRC observers attended a licensee briefing on September 27, 1989 and participated in the discussion of emergency response actions expected during the scenario. It was agreed that controllers would intercede in exercise activities to prevent scenario deviations or disruption of normal plant operations.

The exercise scenario included the following events:

-- Loss of both emergency diesel generators requiring declaration of an UNUSUAL EVENT;

-- A leak in the reactor coolant system of greater than 50 gallons per minute from the Resistance Temperature Detector (RTD) manifold return line isolation valve requiring declaration of an ALERT;

-- A small break loss-of coolant accident (LOCA) from the RTD manifold requiring declaration of a SITE AREA EMERGENCY.

The above events caused the activation of the licensee's on-site emergency response facilities and demonstration of the interface with the ORO and the State of New Hampshire.

2.2 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 organization, activation of emergency response facilities, and actions of emergency response personnel during the operation of the emergency response facilities. The following activities were observed:

1. Detection, classification, and assessment of scenario events;
2. Direction and coordination of the emergency response;
3. Notification of licensee personnel and off-site agencies;
4. Communications/information flow, and record keeping;
5. Assessment and projection of radiological dose and consideration of protective actions;
6. Provisions for in-plant radiation protection;
7. Performance of off-site and in-plant radiological surveys;
8. Maintenance of site security and access control;
9. Performance of technical support, repair and corrective actions;
10. Assembly and accountability of personnel; and
11. Provisions for communicating information to the public.

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 the ability to cope with abnormal plant conditions and implement the emergency plan and procedures.

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 the 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 as follows:

Control Room (The licensee'simulator was used)

Several exercise strengths were identified.

1. The shift crew demonstrated alertness and fast response to alarms and indications. For exa ple, the increased leakage from the reactor coolant system was quickly identified and quantified based on decreasing pressurizer level before any alarms were received which would have brought it to the operators' attention.

2. The Shift Supervisor (SS) completed correct preliminary classification of the UNUSUAL EVENT in 2 minutes and announced it as soon as the loss of the second diesel generator was confirmed by the auxiliary operator (total elapsed time of 4 minutes).

3. Notifications of the UNUSUAL EVENT were made to the states within 3 minutes and the NRC within 9 minutes of the classification of the event. Since the exercise involved the use of the simulator control room rather than the actual control room, these times are based on when the operators simulated the use of the "orange"

phone (used for notification of New Hampshire and Massachusetts) and the NRC Emergency Notification System phone in the simulator control room. These emergency phones are not capable of being used from the simulator. In an actual event, the calls are made from phones which are operable in the plant control room.

4. The Shift Supervisor/Shift Technical Advisor (SS/STA) conducted frequent, independent critical safety function checks of the plant.

5. There was excellent communication among the shift personnel.

6. Correct recognition of and adherence to Technical Specification Action Statements were demonstrated.

7. Routine operations and emergency procedure compliance were professional and precise.

8. Good communication was maintained with emergency response personnel outside the control room. An additional licensed operator reported to the control room after the declaration of the ALERT to set up and maintain direct on-line communications with the Technical Support Center (TSC) and Operations Support Center (OSC). This aided in establishing priorities for direction of repair and troubleshooting activities outside the control room.

One area for improvement was brought to the licensee's attention:

The transfer of authority from the Short Term Emergency Director (STED) (Shift Supervisor in the Control Room) to the Site Emergency Director (SED) in the Technical Support Center was not announced on the plant paging system. Although the STED and SED were both clearly aware that the transfer had occurred, announcement of that fact may be beneficial to other emergency response personnel.

Technical Support Center

Several exercise strengths were identified.

1. Appropriate engineering solutions were pursued to correct or mitigate casualties to equipment, including

   Use of both a fire truck and compressed gas cylinders on-site to recharge the emergency diesel generator air bank;

   Use of the site-specific Probabilistic Risk Assessment to identify probable locations of the reactor coolant system leakage and the subsequent small-break LOCA.

2. Additional support was sought from and use was made of Yankee Atomic Service Department to identify the location of the reactor coolant system leakage.

3. Communications were effective and continuous.

4. Effective use was made of status boards which were updated every fifteen minutes. Data relating to Regulatory Guide 1.97 accident variables were trended, including extrapolation of Refueling Water Storage Tank level and interpretation of the trend. Plots were cross correlated.

5. Discussions were held regarding the potential need for protective actions and at what point they would become necessary if conditions worsened.

6. The TSC effectively coordinated OSC personnel to determine plant conditions and effect repairs.

Two areas for improvement were brought to the licensee's attention:

Within the Technical Support Center, two instances of telephone line noise occurred, causing some minor communications problems during the exercise;

Boron concentration curves should be reviewed to verify that they cover all reasonably expected conditions.

Operations Support Center

Several exercise strengths were identified.

1. Excellent command and control was demonstrated.

2. Dispatch of repair teams was timely and proper. Approximately nine (9) teams were used in accordance with repair efforts determined by the TSC.

3. Information from the repair teams, including results of both containment air and reactor coolant samples obtained from the Post Accident Sampling System (PASS) were rapidly provided to decision makers at the TSC and the Emergency Operations Facility.

4. Excellent in-plant radiation protection precautions were instituted and maintained throughout the exercise.

Emergency Operations Facility (EOF)

Several exercise strengths were identified.

1. The EOF was activated promptly and was operated effectively. Actions by response personnel were timely and in accordance with procedures.

2. Coordination and communication with other emergency response facilities including the TSC, ORO, and the New Hampshire IFO were frequent and effective as were communications between the various divisions of the EOF emergency response staff.

3. Technical assessment was clearly in evidence throughout the exercise. Any suspected inconsistencies between various pieces of information were questioned and resolved.

4. Emergency communications (news releases) were effectively prepared, reviewed and approved.

5. Radiation Monitoring Teams were effectively staged, dispatched and directed.

6. Dose assessment capability was promptly established using the backup Hewlett-Packard HP41-CV calculator after the scenario indicated failure of the METPAC system primary, backup, and Yankee Atomic computer systems to force use of the HP41-CV system.

   Several proposals were made which would have quickly restored the METPAC computers to operation, however in order to test the backup, they were prevented from being implemented by the exercise controllers.

   Several "what if" projections were made for potential events with radioactive material releases including steam generator tube rupture, containment venting, and containment failure.

   Field samples were received and promptly counted in accordance with procedures.

   Meteorology was kept current and forecast conditions carefully evaluated. The effect of any potential wind shift on protective action considerations was considered.

7. Effective security was maintained at the EOF. Personnel accountability results were provided to both the EOF and TSC Managers in a timely manner.

8. Possible protective actions were discussed with the ORO and New Hampshire IFO. These discussions were frequent and effective and included the determination of potentially affected areas and consideration of whether school children should be dismissed at

the normal end of the school day or held at school where they could be more easily evacuated if conditions worsened. Conditions considered included plant evolutions such as the switchover from the injection to the recirculation mode and the stability of projected weather conditions.

Field Monitoring Teams

Several exercise strengths were identified.

1. Field monitoring team members arrived at the EOF promptly and effectively prepared for dispatch.

   The teams performed thorough monitoring kit inventory, instrument checks including source checks, portable air sampler checks, radio checks, and vehicle checks in accordance with their procedures.

   Personnel were very knowledgeable of the procedures and demonstrated proficiency and a good understanding of their responsibilities.

   Good radiological practices were followed in the set-up of the vehicle bay used for the dispatch of the teams and receipt of samples.

   Teams were thoroughly briefed on plant conditions and expected radiological conditions prior to dispatch.

   Team members received appropriate dosimetry prior to dispatch.

2. The teams were dispatched promptly (within 50 minutes of arrival at the EOF).

3. Communications between the EOF and the field teams was excellent.

4. Sample counting equipment was set-up promptly.

5. Sample control and analysis including surveys and the use of anti-contamination clothing were effectively demonstrated.

6. A personnel monitoring and decontamination station was established in the vehicle bay, using effective procedures for control of access and egress, installation of floor coverings, use of survey equipment, and manning the control point.

Media Center/Joint Telephone Information Center

Several exercise strengths were identified.

1. Activation, staffing, and command and control were effectively and efficiently accomplished.

2. Information was obtained through authorized officials, and appropriately coordinated and reviewed prior to release to the public.

3. Information provided to the public was clear, concise and accurate.

4. Rumor control was effective. Media Center rumor control personnel promptly sought verification of rumors and provided the correct information in all cases.

5. Responses to questions posed by exercise controllers simulating press personnel to media briefers were detailed and understandable.

Overall Conclusions

The NRC team noted that the licensee's activation and augmentation of the emergency organization, activation of the emergency response facilities, and use of the facilities were consistent with their emergency response plan and implementing procedures. No exercise weaknesses were identified.

The licensee demonstrated the ability to implement the emergency plan in a manner which would have provided adequate protection for the health and safety of the public.

5.0 Licensee Critique and Exit Interview

The licensee conducted an adequate self-critique of the exercise. There were no exercise weaknesses identified. Following the licensee's self-critique, the NRC team met with the licensee representatives listed in Section 1 of this report to present exercise observations as detailed in this report.

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