U. S. Nuclear Regulatory Commission
Region I

License/Docket/Report: **DPR-61/50-213/94-10**

Licensee: **Connecticut Yankee Atomic Power Company**
P.O. Box 270
Hartford, Connecticut 06101-0270

Facility Name: **Connecticut Yankee Atomic Power Station**

Inspection: **May 13-16, 1994**

Inspection At: **Haddam Neck, Connecticut**

Inspectors: J. Lusher, Emergency Preparedness Specialist
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Approved: _____
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Areas Inspected

The full-participation emergency preparedness exercise conducted by the licensee on May 14, 1994.

Results

Licensee actions were sufficient to demonstrate that the emergency plan and procedures for the facility met NRC requirements and that the plant staff is capable of implementing them. An exercise strength was identified in the Simulator Control Room where the shift crew demonstrated good event diagnosis, classification and made timely notifications. No violations or exercise weaknesses were identified. An area for potential improvement was identified in the exchange of information between the Control Room Data Coordinator and the Technical Information Coordinator. Also, some administrative deficiencies were noted in the Operational Support Center. Significant performance improvement was demonstrated in making protective action recommendations to the State. A previously identified item in this area was resolved.

DETAILS

1.0 Persons Contacted

The following individuals were contacted during the inspection and attended the exit meeting on May 16, 1994.

D. Aloi, Senior Scientist, Emergency Preparedness
P. Bauchmann, Emergency Planner
R. Brown, Connecticut Yankee, Staff Assistant
W. Buch, Senior Emergency Preparedness Coordinator, Connecticut Yankee
K. Burgess, Emergency Preparedness Coordinator, Connecticut Yankee
B. Danielson, Connecticut Yankee, Staff Assistant
J. Deveau, Northeast Utilities Service Company, Emergency Preparedness Supervisor
J. Hauxhurst, Northeast Utilities Service Company
J. LaPlatney, Unit Director, Connecticut Yankee Atomic Power Company
E. Maclean, Emergency Plan Trainer
T. McDonald, Connecticut Yankee, Maintenance Manager
A. Nericcio, Connecticut Yankee, Supervisor Public Information
W. Nevelos, Connecticut Yankee, Director Nuclear Services
T. Reyher, Emergency Planning
R. Rodgers, Director, Emergency Preparedness
A. Tatro, Nuclear Information Coordinator, Emergency Preparedness

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

2.0 Emergency Exercise

A full-participation, Federal Emergency Management Agency (FEMA) graded, emergency exercise was conducted at the Connecticut Yankee Atomic Power Station on May 14, 1994 from 7:00 a.m. to 12:35 p.m. The State of Connecticut and local communities participated. The Federal Emergency Management Agency evaluated the responses of the State and other off-site agencies.

Exercise objectives were submitted to the NRC on February 11, 1994. The completed scenario package was submitted to the NRC on March 11, 1994. The NRC reviewers discussed scenario improvements with the licensee's emergency preparedness staff on April 20, 1994. These improvements were incorporated into the scenario by the licensee. The scenario provided adequate testing of the major portions of the Emergency Plan and Implementing Procedures, and also provided for demonstration of areas previously identified by the NRC as being in need of corrective action.

On May 13, 1994, at 1:00 p.m. NRC observers attended a licensee briefing on the revised scenario in the Connecticut Yankee Emergency Operations Facility (EOF) at the Haddam Neck Plant site. The licensee discussed those emergency response activities that

would be simulated and stated that, since the plant was in operation, exercise controllers would intercede if any exercise activity had the potential to disrupt plant activities.

3.0 Activities Observed

The NRC inspection team observed the activation and augmentation of the emergency response facilities (ERFs) and the actions of the emergency response organization (ERO) staff. The following specific activities were observed:

1. Selection and use of control room procedures.
2. Detection, classification, and assessment of scenario events.
3. Direction and coordination of emergency response.
4. Notification of licensee personnel and off-site agencies.
5. Communications/information flow, and record keeping.
6. Assessment and projection of off-site radiological dose, and consideration of protective actions.
7. Provisions for in-plant radiation protection.
8. Provisions for communicating information to the public.
9. Accident analysis and mitigation.
10. Accountability of personnel.
11. Post-exercise critique by the licensee.

4.0 Exercise Finding Classifications

Emergency preparedness exercise findings classifications are defined 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 did not, alone, constitute an overall response inadequacy.

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

5.0 Exercise Observations

Activation and utilization of the ERO and ERFs were generally consistent with the Emergency Plan (the Plan) and Emergency Plan Implementing Procedures (EPIPs). The presence of Messrs J. Opeka Executive Vice President - Nuclear and J. Stetz, Vice President, Haddam Neck Station, as observers in the ERFs during the exercise, demonstrated management attention and support. The following Sections of this report provide observations made by the inspection team during the exercise in the various ERFs.

6.0 Simulator Control Room (SCR)

The Shift Supervisor and his crew promptly recognized and correctly diagnosed the event and made the accurate classification of an Alert. Notifications to the State and local agencies and the NRC were completed within the required time limits. Excellent recognition of adverse plant conditions by the SCR crew and proper use of plant Emergency Operating Procedures (EOPs) to initiate corrective actions was identified by the NRC as an exercise strength. Overall, the Control Room crew responded well to the simulated events.

Due to unidentified problems in the exchange of information between the Control Room Data Coordinator and the Technical Information Coordinator in the Emergency Operations Facility (EOF), on several occasions Control Room operators became distracted from their duties by direct telephone requests for technical information and plant conditions from personnel in the ERFs. This was identified by the inspection team as an area for improvement.

Late in the exercise, the combination of an error in a procedure and a lack of attention to detail by an operator caused a momentary loss of power to the safety injection pumps as a result of opening the incorrect distribution breaker. The procedure error was promptly communicated to the operating plant Shift Supervisor so that a procedure change could be initiated to prevent the error during actual plant operations.

7.0 Technical Support Center (TSC)

The TSC was staffed and activated within the one hour requirement. The inspectors observed that the TSC staffing and resources were consistent with the Plan. The TSC status boards and logs were updated frequently and contained accurate information.

There was good communication between the plant TSC staff and the corporate TSC staff. However, the inspectors noted that the plant Manager, TSC (MTSC) did not aggressively interface with either the Manager, Operations Support Center (MOSC) or the Director, Site Emergency Operations (DSEO). He provided few recommendations concerning repair options, priorities and support to the MOSC and the DSEO. The corporate TSC staff generally took the lead in recommending mitigation activities to the DSEO. The lack of aggressiveness on the part of the plant MTSC did not adversely impact the performance of the MOSC or the DSEO, or the outcome of the exercise.

The TSC was properly equipped, allowing its staff to monitor plant conditions during the simulated accident. Additionally, Inspection Report 50-213/93-02 previously identified that the availability of control circuitry wiring diagrams and vendor information at the TSC was an area where improvement could be realized. During this inspection, the inspector found that TSC staff had access to and used control circuitry wiring diagrams.

8.0 Operational Support Center (OSC)

The OSC was staffed and activated within the one hour requirement. The MOSC demonstrated good command and control. He aggressively pursued plant repairs, continually evaluated work priorities, and maintained good control of Emergency Repair Teams (ERTs). Communications flow was effective. The MOSC kept the DSEO, Manager, Control Room Operations (MCRO), and the MTSC apprised of repair efforts, and regularly briefed facility personnel on plant status. He also proactively provided solutions in anticipation of possible problems, such as readying the station blackout diesel for operation in case a station blackout occurred.

ERTs were efficiently briefed, dispatched, and controlled. Proposed repairs were controlled by faxing work orders to the OSC staging area in the plant. Emergency Team Work Assignment (ETWA) forms were effectively used for assigning and tracking teams. Teams also had good health physics coverage and were notified of radiological conditions after the release of radiation. The ERTs used the OSC staging area in the plant after initial dispatch from the OSC and were most often debriefed by telephone, as planned. However, the inspectors noted some administrative deficiencies. One ERT maintained the same team designation number for several tasks even though the team's composition changed. This could cause confusion, e.g., when auditing Emergency Team Work Authorization forms, if the MOSC was not aware of team composition at all times. Additionally, staff in the OSC used the wrong revision of Attachment 12.3, the ERT debriefing form, and the completed form did not always have the MOSC signature and time recorded as required. Further, the MOSC did not record his arrival time in the OSC log as required by EPIP 1.5-42, *Manager of Operational Support Center.* Otherwise, all procedures were followed. These administrative deficiencies had no adverse effect on the OSC staff performance.

Control of the Diesel Generator (DG) sub-scenario failed when the workers and the controller, at 11:00 a.m. actually manipulated the shutdown lever of the B DG in an attempt to "clarify" a symptom concerning movement of the rod attached to the fuel rack. Subsequently, after a player questioned whether that action was proper, the controller contacted the operating plant Shift Supervisor at 12:15 p.m. to inform him of the occurrence and to have him determine whether there was any impact on engine operability. The Shift Supervisor confirmed that the action did not impact the operability of the engine. Additionally, a Plant Information Report was prepared by the licensee and a root cause analysis was to be performed to determine the appropriate corrective actions.

9.0 Emergency Operations Facility

The inspectors noted good use of periodic briefings by the DSEO in accordance with EPIP 1.5-21. The back-up DSEO kept the representative from the Department of Environmental Protection of the State of Connecticut informed of major changes in plant status during "fast breaking" events in the scenario.

The inspectors noted that the DSEO worked well with the MCRO; however, the decision on the General Emergency classification upgrade did not include input from the MTSC. The inspectors observed that potential success paths for accident mitigation from the plant TSC were not always presented to the DSEO for consideration, even though the DSEO held meetings with the MTSC and staff periodically during the exercise. As previously stated in Section 7.0, this did not affect the exercise.

The inspectors noted good interaction between the Corporate Emergency Response Organization (CERO) staff and the DSEO concerning Protective Action Recommendations (PARs) and upgrades on emergency classifications. The DSEO effectively used the input from the Manager, Radiological Dose Assessment (MRDA) for concurrence of the PARs. Overall, the DSEO provided timely and appropriate accident classifications.

10.0 Corporate Emergency Operations Center (CEOC)

The CEOC was activated in accordance with the Corporate Organization for Nuclear Incidents (CONI) procedures. The Director, Corporate Emergency Response Organization (DCERO) demonstrated a thorough understanding of all corporate response activities and effectively executed command and control over them. The DCERO also continually evaluated the plant's emergency action levels to determine if escalation of response activities was required.

The Corporate Manager, Technical Support (CMTS) provided responsive and proactive analyses of plant conditions and timely recommendations to the DCERO.

The Corporate Manager, Radiological Consequence Assessment (CMRCA) effectively evaluated potential and actual dose consequences, including analyses of source terms and release pathways. Field monitoring teams were appropriately directed to verify these assessments. The need for protective actions for field teams was evaluated by the CMRCA. Upon declaration of the General Emergency, the CMRCA had already discussed with and received approval from the DCERO for the PARs to be forwarded to the State EOC. The PARs were appropriate for the simulated plant conditions that existed.

11.0 Joint Public Information Center (JPIC)

The inspector in the JPIC at the Hartford National Guard Armory observed two media briefings during the latter part of the exercise. The news releases were properly coordinated with the DSEO and the State of Connecticut. The State coordinated all of the news briefings and the licensee's spokesperson provided information on the plant conditions.

During the briefings, the licensee's spokesperson was able to explain the plant conditions at a level that the public could understand. However, during one of the briefings, the licensee's spokesperson was questioned about core damage and he began talking about fuel rod melt, which had not occurred. In another briefing, the licensee's spokesperson related that one or several of the relief valves had stuck open and that this was part of the reason why the plant had a loss of coolant accident. This information was also erroneous. The inspector questioned the JPIC staff regarding the source of the erroneous information, but it could not be identified with any certainty. Discrepancies in information provided to the JPIC staff was identified by the inspectors as an area where improvement could be realized.

12.0 Licensee Action On Previously Identified Items

Based upon discussions with the licensee representatives, examination of procedures and records, and NRC observations during the exercise, the following previously identified open item was resolved.

- Closed (IFI 50-213/93-02-01). In a previous exercise, the CMRCA did not receive concurrence on PARs from the DCERO (per CONI 4.12) prior to communicating them to the State of Connecticut. During this exercise, the CMRCA followed the appropriate procedure and obtained concurrence on the PARs from the DCERO.

During this exercise, the licensee's ERO staff adequately demonstrated acceptable performance in carrying out items previously identified by the NRC as areas for improvement.

13.0 Licensee critique

On May 16, 1994, the NRC team attended the licensee's exercise critique. The licensee's critique was conducted by the Supervisor, Emergency Preparedness Technical Group who summarized the key issues in each of the functional areas. Findings were characterized as strengths and weaknesses. The critique was appropriately self-critical, identified most of the NRC findings and was assessed by the NRC inspectors as a good self-evaluation.

14.0 Exit Meeting

Following the critique, the inspectors met with the licensee's personnel listed in Section 1.0 of this report to discuss the inspection findings. The team leader summarized the NRC's observations. The licensee was informed that:

- Overall, the onsite response to this exercise was acceptable, demonstrating effective implementation of the Plan and EPIPs.

- There was one exercise strength, three areas for improvement, and no weaknesses
- Previously identified item, IFI 50-213/93-02-01, was closed.

Licensee management acknowledged the NRC's findings.

On May 26, 1994, the area for improvement documented in Section 11.0 of this report was conveyed to Mr. R. Rogers by Mr. Lusher in a telephone conversation.