U. S. NUCLEAR REGULATORY COMMISSION REGION I

Report Nc. 50-443/87-22

Docket No. 50-443

License No. NPF-56

Permit No. CPPR-135

Priority --

Category B/C

Licensee: Public Service Company of New Hampshire 1000 Elm Street 03105 Manchester, New Hampshire

Facility Name: Seabrook, New Hampshire

Inspection At: Seabrook Station, Unit 1

Inspection Conducted: August 19-21, 1987

Inspectors:

J. A. Schuroch Preparedness Specialist

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Approved by:

W. J. Lazarus, Chief Emergency Preparedness Section, EP&RPB, DRSS

Inspection Summary: Inspection on August 19-21, 1987 (Report No. 50-443/87-22)

Areas Inspected: Routine announced inspection by two region-based inspectors to review the adequacy of licensee actions to correct a Notice of Violation issued for failing to notify both Massachusetts and New Hampshire during an Unusual Event on February 11, 1987 and follow-up of several issues concerning the alert and notification system sirens.

Results: No violations were identified.

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DETAILS

1. Persons Contacted

- *A. Callendrello, Emergency Assistance Manager
- *T. Harpster, Director, Emergency Preparedness
- *D. Moody, Station Manager
- *D. Perkins, Licensing
- *J. McDonald, Radiological Assessment Manager
- R. Strickland, Shift Superintendent
- R. Thompson, Shift Superintendent
- * Indicates those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

During the inspection, the inspector reviewed the licensee's progress concerning the items opened during inspection 50-443/87-08. Follow up of licensee actions to address a Notice of Violation and related items are discussed below:

-(Closed) Violation (87-08-01): Failure to report the declaration of an "Unusual Event" to the Commonwealth of Massachusetts within 15 minutes. NHY responded to the March 23, 1987 Notice of Violation in letter (NYN-87057) dated April 23, 1987.

The inspector reviewed both immediate and long term corrective actions taken by NHY to address the Notice of Violation. Management directives were provided to all shift supervisors stating that when procedures require the declaration of an emergency class, the Commonwealth of Massachusetts and the State of New Hampshire will be notified within the required time frame. In addition, Emergency Response Procedures were revised where necessary to improve guidance to operators concerning classification, notification, and termination of emergencies. Training was provided to all shift supervisors, Unit shift supervisors and operations management on the revised procedures and the circumstances surrounding the violation.

The inspector reviewed the training lesson plans and conducted interviews with shift supervisors and the team leader for Requalification Training to ensure training was adequately conducted and received by all shift supervisors. Revisions to procedures were also reviewed. The inspector concluded, based on the above, that training and procedure revisions are adequate.

Based on the above, this item is closed.

-(Closed) Unresolved Item (87-08-02). The relationship between the shift supervisor and the operations manager (or other Duty Station Emergency Director) during emergency classification and notification, needs to be clarified and stressed in training.

The inspector reviewed requalification training program lesson plans which covered the role of the shift superintendent as the Short Term Emergency Director (STED). The STED is responsible for emergency classification and notification until relieved by Site Emergency Director. In addition, selected shift supervisors and the team leader for Requalification Training were interviewed. The inspector determined that all shift supervisors were trained in their responsibilities and that their knowledge level was adequate.

Based on the above, this item is closed.

-(Closed) Unresolved Items (87-08-03 & 04) Additional training may be necessary to clarify what events are classified as Unusual Events; the procedure for reporting events which have been classified under the Emergency Plan, but have cleared before reporting is possible, needs to be evaluated.

The inspector reviewed Emergency Response Procedures, ER-1.0, "Classification and Notification of Emergencies at Zero Power " and ER-1.1, "Classification of Emergencies" to evaluate procedural adequacy for classification of events and for guidance on reporting requirements. Both procedures now contain the necessary classification for an operator to both classify and report events as required. Each procedure discusses how to report an event that has cleared before reporting was possible during the event. Use of these procedures was demonstrated for inspector by a selected shift supervisor.

Based on the above, this item is closed.

-(Closed) Unresolved Item (87-08-05) The acceptability of using the state notification "hot line" by the states for calling in for additional information needs to be evaluated.

The inspector reviewed a NHY memorandum which documents that New Hampshire Civil Defense Agency officials now have a clear understanding of the notification process and the use of the "hot line."

Based on the above, this item is closed.

-(Closed) Unresolved Item (87-08-07): The common-mode failure of the equalizing valve linkage on both the inner and outer emergency personnel air lock doors needs to be evaluated, and necessary reports completed if appropriate.

On April 24, 1987 NHY submitted a 10 CFR 21 to the NRC report (NYN-87059) report concerning the equalizing valve failure. The above item is therefore closed and will be tracked under item 87-88-02 until resolved (see IR 50-443/87-10).

3. Follow-up on Public Alerting System (Siren) Issues

A. East Kingston Siren Test of January 1987

A test of the four sirens in East Kingston, New Hampshire was conducted on January 31, 1987 at the request of the town of East Kingston. The test was conducted by the town in order for the town to determine the adequacy of sound coverage of the four East Kingston sirens, in case the town ever needed to activate their sirens, separately from the complete Seabrook alert and notification system, in case of a non-radiological emergency. It was recognized at the time that the four sirens in East Kingston would probably not be sufficient to alert all of East Kingston since part of East Kingston depended upon the sirens in neighboring towns. Because this was not intended to be a test of the Seabrook Alert and Notification System, it was conducted by the town without an approved Seabrook test procedure. As a result, the location of the observers stationed to listen for the sirens was not controlled in a manner to ensure that they were located in an area intended to be covered solely by the East Kingston sirens in the event of activation of the complete alert and notification system. During the test, lower than expected sound level was experienced by the observers in the field.

Based upon the licensee's review and reconstruction of the test by interviews with test personnel and review of the tape recordings made of the radio activation signals, it was determined that the sirens were not actuated long enough for the test to be valid. Specifically, a complete rotation of a siren requires approximately 30 seconds, and during the test sirens were activated for approximately 15 seconds. Consequently, sirens were not activated long enough to cover all the intended area and could very well have been pointed away from the observer(s) during the test.

In addition to the procedural inadequacy of insufficient activation time, some actual malfunctions were identified as a result of severe weather conditions which existed just prior to the siren testing. A heavy wet snow with driving wind and subsequently falling temperatures had occurred the night before the test. The sirens were installed with the sirens facing north, allowing the snow and ice to build up on the siren grates and throats from the effects of the northerly wind. The snow also accumulated on the plates attached to the bases of the activation (both on transmission and receiving) antenna. These plates serve as a ground plane. The accumulation of snow effectively detuned the antenna, lessening the strength of the activation signal.

During the test with activation being triggered by the state antenna, three out of four sirens failed to activate; from the East Kingston

antenna, one of four failed to activate. After removal of the snow from the activation antenna, activation was normal from both activation points. When activated, a lower than expected acoustic level from the sirens was noted by the observers (exact decibel ievel is unknown), apparently, due to snow and ice build-up.

As a result of the above noted deficiencies, the licensee has taken the following actions:

- A siren activation test procedure has been developed and approved for East Kingston sirens. The inspector reviewed "Siren Activation Test Procedure-East Kingston", dated April 4, 1987, and verified that it is adequate in scope and content to assure a valid test of the sirens. The procedure is sufficiently generic in nature so that it could be modified for tests by other towns as desired. A retest of the East Kingston sirens was conducted on April 4, 1987, with acceptable results.
- The inspector verified that test procedure ISO608.002, "Quarterly Functional Test of the ENS Remote Siren Locations" and IDO608.003 "Annual Functional Test, and Maintenance Procedure of the Emergency Notification System Remote Siren Locations", have been changed to reflect the after test orientation of the sirens as "south". This orientation was selected by the licensee based on a review of wind rose data for the winter months and should significantly reduce the possibility of ice/snow buildup on the siren grates or throats. Direct observation of several sirens during a tour verified that they were oriented to south.
- The inspector verified that the licensee has modified the activation antenna ground planes (except for the six sirens located in Rye) by replacing the flat plates with four short radial wires. This precludes the possibility of snow/ice buildup on the ground plane plates with the resultant de-tuning of the antenna, and increases the reliability of the sirens. The licensee plans to modify the antenna on the Rye, New Hampshire sirens when agreement is reached with the town on this enhancement to the siren system.
- The inspector verified that, at the time of this inspection, 79 of the sirens and grates had been treated with "Vellox 140," an anti-icing compound. The remainder of the sirens are scheduled for receipt of this treatment this summer. The sirens located in Rye, New Hampshire will be treated with this coating when agreement is reached with the town concerning this enhancement to the siren system. Completion of this action will be verified in a subsequent inspection.

The completion of the modifications to the antennae in Rye, New Hampshire, and completion of the application of the anti-icing coating will be verified in a subsequent inspection (50-443/87-22-01).

B. Merrimac, Massachusetts Sirens

Because of legal challenge by the town of Merrimac, one of the sirens called for in the final design report was not installed. As a result, the licensee was required to perform background/ambient noise readings to verify that the required alerting margin of 10db above average daytime ambient background would be met by the remaining sirens (rather than the 60 db coverage which is acceptable without performance of background measurements). The inspector observed the contractor laboratory technician recording the ambient noise levels at one location during this inspection. The results of this testing will be provided to FEMA for review as part of the alerting system acceptability verification.

A second issue with the Merrimac sirens involves the fact that the town has prevented connection of AC power to the sirens. As the sirens are battery operated, AC power is only used for charging their batteries. In order to assure operability, the licensee had been replacing the siren batteries every two weeks, but has subsequently installed solar cell battery chargers to keep the batteries at or near full charge. Even without the battery chargers, test results reviewed by the inspector demonstrated that battery capacity was sufficient (after two weeks of inactivity) for at least two complete three minute activation cycles, which is sufficient to meet the plan requirements for length of activation. The addition of the solar trickle chargers enhances that capability.

4. Exit Meeting

The inspector met with representatives of the licensee at the conclusion of the inspection (see detail 1 for attendees) to discuss the scope and findings of this inspection as detailed in this report. At no time during this inspection was any written material provided to the licensee.