

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-443/86-10

Docket No. 50-443

License No. CPPR-135 Priority -- Category B-1

Licensee: Public Service of New Hampshire

P.O. Box 330

Manchester, New Hampshire

Facility Name: Seabrook Unit 1

Inspection At: Seabrook, New Hampshire

Inspection Conducted: February 24-28, 1986

Inspectors: W. Lazarus -  
W. Lazarus, Senior EP Specialist

4/1/86  
date

W. Thomas, EP Specialist  
C. Amato, EP Specialist  
C. Gordon, EP Specialist  
J. Hawhurst, EP Specialist  
G. Bryan, COMEX Corporation  
G. Wehmann, Battelle

Approved by: T. Harpster for  
T. Harpster, Chief,  
Emergency Preparedness Section

4/1/86  
date

Inspection Summary: Inspection on February 24-28, 1986 (Report Number  
50-443/86-10)

Areas Inspected: Routine announced emergency preparedness inspection to observe the licensee's first full scale emergency exercise performed on February 26, 1986.

Results: No violations were identified. The licensee's emergency response actions demonstrated during this exercise were adequate to provide appropriate protective measures for the health and safety of the public.

8604000259 857403  
PDR ADUCK 05000443  
PDR  
G

## DETAILS

### 1. Persons Contacted

\*A. Callendrello, Emergency Preparedness Supervisor  
\*P. Casey, Senior Emergency Planner  
\*W. DiProfio, Assistant Station Manager  
\*S. Ellis, Security Department Supervisor  
\*J. MacDonald, Radiological Assessment Manager  
\*D. Moody, Station Manager  
W. Otto, Emergency Planner  
\*J. Quinn, Director of Emergency Planning  
\*G. Thomas, Vice President - Nuclear Production  
\*L. Walsh, Operations Manager

The inspectors also interviewed several licensed operators, health physicists, administrative and training personnel.

\*Denotes those present at the exit interview.

### 2. Emergency Exercise

The Seabrook Station full scale emergency preparedness exercise was conducted on February 26, 1986.

#### A. Pre-Exercise Activities

Prior to the emergency exercise, NRC Region I representatives had telephone discussions and met with licensee representatives to review the scope and content of the exercise scenario. As a result of these discussions, revisions were made to the scenario and supporting data sheets.

The NRC observers and licensee observers and controllers attended a scenario briefing on February 25, 1986. The emergency response actions expected during the various phases of the scenario were discussed.

The scenario included the following events:

- \* An explosion in the chlorination building due to defective instrumentation and a pump electrical fault which ignited an undetected hydrogen accumulation.
- \* A fire in the "B" containment building spray pump area when the pump was started for testing following maintenance. The fire damage rendered the pump inoperable.
- \* A double-ended shear of cold leg "B".

- In conjunction with the cold leg break the containment Building Spray Valve CBS-VII failed to open and Safety Injection Pump A failed to operate.
- Electrical Emergency Buss E6 failed.
- Station conditions degraded to the point where in-core thermo-couples indicated greater than 700°F with Reactor Vessel Level Indication System less than 40%.
- Station radiological conditions indicated significant core damage due to the LOCA.
- Reactor vessel level was restored, however, in-containment pressures and radiation levels increased drastically.
- The "A" SI Pump was restored and cold leg recirculation initiated.
- The closed indication for several containment on-line purge valves was lost and an off-site release began.

The above events caused activation of the licensee's emergency facilities and also permitted state and local governments to exercise their Emergency Plans.

#### B. Activities Observed

During the conduct of the licensee's exercise, NRC team members made detailed observations of the activation and augmentation of the emergency 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:

- Detection, classification, and assessment of the scenario events;
- Direction and coordination of emergency response;
- Notification of licensee personnel and offsite agencies of pertinent information;
- Assessment and projection of radiological (dose) data;
- Recommendation of protective actions;
- Provisions for in-plant radiation protection;
- Performance of offsite, onsite, and in-plant radiological surveys;
- Maintenance of site security and access control;
- Performance of technical support;
- Performance of repair and corrective actions;
- Communications/information flow, and record keeping; and
- Management of Recovery Operations.

The NRC team noted that the applicant's activation and augmentation of the emergency organization; activation of the emergency response facilities; and actions and use of the facilities were generally consistent with their emergency response plan and implementing procedures. The team also noted the following positive aspects of the licensee emergency response that were indicative of their ability to cope with abnormal plant conditions:

- The control room operators demonstrated excellent knowledge of the plant emergency operating procedures.
- The development of plant actions by control room personnel to effectively mitigate the consequences of the accident were excellent.
- Shortly after the initial offsite release an excellent briefing of the Control Room staff was provided by the TSC Emergency Operations Manager.
- The TSC contained an excellent document library, which was well used as a resource throughout the exercise.
- The activation of the TSC was timely and plant condition briefings by the Site Emergency Director (SED) were frequent.
- The activation of the OSC was timely and frequent briefings were held to update personnel on plant conditions.
- Good control over the OSC in-plant teams and good communications with the teams were demonstrated throughout the exercise.
- The OSC team members demonstrated a generally good knowledge of sound health physics practices.
- The Incident Field Office location in the EOF functioned very well during the exercise.
- Good coordination between the dose assessment specialist and the field monitoring team coordinator was demonstrated.
- Offsite field monitoring teams were well briefed prior to dispatch from the EOF and were frequently updated on changing plant conditions.
- Offsite sampling coordinates were quickly located, and sampling results were promptly reported back to the Offsite Team Communicator.

- Offsite teams demonstrated a thorough knowledge of the use of offsite monitoring team equipment and procedures.

Although the ability to analyze plant conditions, and make appropriate, timely, protective action recommendations for the public were found to be acceptable, the following items were identified which could have degraded overall response during emergencies and require evaluation for possible corrective action:

- The classification of the chlorination building explosion as a Notification of Unusual Event was incorrect. (This appears to be partly due to a deficiency in EPIP ER-1.1 in that the station initiating condition is misleading). A second independent verification of correct classification should be considered to avoid errors in classification. (50-443/86-10-01)
- EPIP ER-1.4 directs evacuation to the Seabrook Greyhound Track if the wind is from the east. This is in error as the dog track is due west of the plant (50-443/86-10-02).
- There was no security representation in the TSC. The Maintenance Coordinator assumed this function, but he is not security trained. It may be more appropriate to station the Security Coordinator in the TSC rather than in the EOF (50-423/86-10-03).
- There was no dose assessment/dose projection capability demonstrated in the TSC (neither prior to EOF activation, nor as a backup to EOF after activation). Instead the TSC relied on YAEC to perform dose projections based on core damage. This resulted in a one hour delay (because of a computer malfunction) before this information was available to the SED. (No actual release was taking place at that time). The capability to perform preliminary dose projections onsite exists by procedure and is required by ER-3.1 (50-443/86-10-04).
- Priorities of TSC activities were occasionally inappropriate. The General Emergency classification was made by the Emergency Operations Manager without verification by the Site Emergency Director (SED) (50-443/86-10-05).
- The TSC was somewhat slow in analyzing the indications of a DBA LOCA (50-443/86-10-06).
- The SED was not informed of the failure of the Containment Building Spray (CBS) discharge cross-connect valve until 30 minutes after the failure was identified. TSC personnel were not briefed on the failure until an additional ten minutes had passed (50-443/86-10-07).
- The general plant status board in the TSC at times lagged actual plant conditions by 30 minutes (50-443/86-10-08).

- Form ER-3.2B (Rev. 2) from OSC Operations procedure EPIP ER-3.2 had been issued, but the procedure in the OSC had not been revised to reflect the change (50-443/86-10-09).
- Extremity TLDs were not considered for the containment atmosphere sample team although they were involved in handling a 40R/hr (contact) source. Revised form ER-3.2B (Rev. 2) does not have provisions for the Radiological Controls Coordinator to specify the use of extremity TLDs (ER-3.2 and ER-6.2 contain these provisions) (50-443/86-10-10).
- The method of tracking personnel exposures by team members when RWPs are not used is not clearly specified (50-443/86-10-12).
- EBS messages are not monitored for accuracy. The EBS message issued at 11:05 was contrary to protective action recommendations agreed to by NH Yankee and NH CD. (Message announced that the beaches at Seabrook, Hampton and Hampton Falls would be evacuated and that those three towns would be sheltered. It should have announced evacuation of the towns of Seabrook, Hampton, and Hampton Falls, with sheltering downwind out to five miles). (50-443/86-10-13).
- Tracking of feedback on actual offsite protective actions taken was not indicated on the EOF status board (50-443/86-10-14).
- On occasion, delays occurred in EOF discussions/decision making while searching messages for the most recent values of critical plant parameters (containment pressure, containment radiation levels, plant vent stack release rates, etc.) Trending such information on a status board would improve response times (50-443/86-10-15).
- The Response Manager interfaced with several different levels in the various organizations in the EOF. He should consider a single point of contact with each organization and delegate other contacts to the Technical Coordinator (50-443/86-10-16).
- There is no PA speaker in the dose assessment area of the EOF. Several important announcements were not heard as a result. (50-443/86-10-17).
- Critical information was not recapitulated on a frequent enough basis during press briefings in the media center (50-443/86-10-18).

3. Exit Meeting

The inspectors attended the applicant's critique on February 27, 1986 following the critique, the NRC team leader summarized the observations made during the exercise as detailed in this report (See detail 1 for attendees).

At no time during the inspection was any written material provided to the licensee by the inspectors.