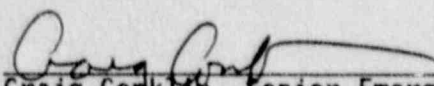



U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No: 50-293/89-11
Docket No: 50-293
License No: DPR-35 Priority _____ Category C
Licensee: Boston Edison Company
RFD #1 Rocky Hill Road
Plymouth, Massachusetts 02360
Facility Name: Pilgrim Nuclear Power Station
Inspection At: Plymouth, Massachusetts
Inspection Conducted: October 10-13, 1989

Inspector: 
Craig Conkith, Senior Emergency
Preparedness Specialist, DRSS 10/19/89
date

Approved By: 
William Lazarus, Chief, Emergency
Preparedness Section, FRSSB, DRSS 10/24/89
date

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D. Vito, Region I
S. Merwin, Battelle
C. Marschall, SRI
C. Carpenter, RI

Inspection Summary: Inspection on October 10-13, 1989, (Report No. 50-293/89-11)

Areas Inspected: A routine, announced emergency preparedness inspection and observation of the licensee's full-participation annual emergency preparedness exercise conducted on October 12, 1989. The inspection was performed by a team of seven NRC Region I, headquarters and contractor personnel.

Results: No violations were identified. The licensee's response actions for this exercise were adequate to provide 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 October 13, 1989.

- S. Sweeney, President
- R. Bird, Senior Vice President - Nuclear
- K. Highfill, Vice President, Nuclear Operations
- E. Robinson, Manager Nuclear Information
- G. Davis, Vice President, Nuclear Administration
- R. Swanson, Vice President, Nuclear Engineering
- W. Clancy, System Engineering Division Manager
- E. Kraft, Deputy Plant Manager
- R. Varley, Emergency Preparedness Department Manager
- S. Hook, Onsite Emergency Preparedness Section Manager
- D. Landahl, Onsite Emergency Preparedness Division Manager
- J. Morlino, Drills and Exercise Coordinator

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

2.0 Emergency Exercise

The Pilgrim Nuclear Power Station full-participation exercise was conducted on October 12, 1989, from 7:30 a.m. until 2:00 p.m. Subsequently, the Commonwealth of Massachusetts and local Towns of Carver, Duxbury, Kingston, Marshfield, Plymouth, and Bridgewater and the City of Taunton participated. The Federal Emergency Management Agency (FEMA) observed off-site activities.

2.1 Pre-exercise Activities

The exercise objectives submitted to the NRC Region I on July 10, 1989 were reviewed and determined to adequately test the licensee's Emergency Plan. On August 8, 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 scenario. As a result, minor revisions were made to the scenario and supporting data provided by the licensee. It was determined that the scenario would provide for adequate testing of major portions of the licensee's Emergency Plan and Implementing Procedures and also provide the opportunity for licensee personnel to demonstrate those areas previously identified by the NRC as in need of corrective action. NRC observers attended a licensee briefing on October 11, 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:

- High local power levels as a result of an improperly calculated rod swap with resultant fuel clad damage;
- High radiation alarm on the Augmented Off-Gas air ejectors;
- High radiation levels indicated on the Torus Containment High Range Monitoring System;
- Steam line break in the steam tunnel;
- Release of radioactivity to the environment;
- Declaration of Alert, Site Area Emergency and General Emergency classifications; and
- Recommendation of protective measures to off-site authorities.

The above events caused the activation of the major portions of the licensee's on-site and off-site emergency response facilities.

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

Several exercise strengths were identified.

1. The operating crew quickly recognized plant conditions and made subsequent prompt and conservative classifications.
2. The Nuclear Watch Engineer exhibited good command and control.
3. The operating crew displayed a good application of technical expertise to mitigate the accident and recommend emergency classification upgrades to the Emergency Director at the Emergency Operations Facility.
4. The Administrative Assistant was knowledgeable and effective in carrying out notification duties.

No exercise weaknesses were identified.

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

1. Turnover from the Nuclear Watch Engineer to the Emergency Plant Operations Supervisor was slow and cumbersome. This was an administrative problem regarding turnover paperwork, not a

performance issue.

2. The Digital Notification Network (DNN) facsimile machine malfunctioned. The Alert message was issued promptly utilizing the voice capability of the DNN, however the initial message declared an Unusual Event. This was immediately corrected, but did cause some confusion off-site.

Technical Support Center

Several exercise strengths were identified.

1. The TSC was staffed and activated in a timely manner.
2. The TSC staff demonstrated a good technical effort, especially regarding repair tracking and prioritization.
3. Low noise levels were maintained throughout the exercise.

No exercise weaknesses were identified.

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

1. Eating, drinking and smoking continued in the TSC prior to ascertaining habitability. Additionally, these activities were not stopped after the release occurred and habitability was reverified.
2. The TSC staff estimated core damage by using a mathematical LOCA model early in the exercise. The use of this model was inappropriate for the situation at that time and led to the incorrect conclusion that core damage was low and that a PASS sample would not be necessary. The extent of core damage was recognized later in the exercise from other symptoms.

Operations Support Center

Several exercise strengths were identified.

1. There was very good interaction between the various technical disciplines within the OSC.
2. The tracking and accountability of teams was effective.
3. The OSC manager gave very good briefings and debriefings of the repair teams.

No exercise weaknesses were identified.

No areas for improvement were identified.

Emergency Operations Facility (EOF)

Several exercise strengths were identified.

1. There was an excellent interface with the representatives of the Commonwealth of Massachusetts located in the EOF.
2. Classifications made in the EOF were prompt.
3. The Dose Assessment staff was knowledgeable and performed a variety of calculations based upon the known source term and postulated release paths.
4. Protective Action Recommendations (PARs) were well-reasoned and conservative. Data and information regarding the formulation of the PARs was freely shared with the representatives of the Commonwealth of Massachusetts.
5. The Dose Assessment staff compared actual field team results with calculated results and promptly resolved differences.

No exercise weaknesses were identified.

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

1. A SAM-II was not operable because of dead batteries and a portable generator was out of gas. The licensee should examine equipment backup capabilities when there is instrument failure due to batteries, as well as their preventative maintenance program to detect problems prior to equipment use.
2. Two programming errors were noted in the dose assessment programs: the units of entry were not specified (MREM vs REM); and the changing colors representing evacuation and shelter results when screens are changed.

Media Center

Several exercise strengths were identified.

1. Press briefings were informative and response to questions was very good.
2. Press releases were accurate.

No exercise weaknesses were identified.

One area of improvement was brought to the licensee's attention.

1. The briefing room in Memorial Hall is very noisy. The licensee should consider methods to reduce noise levels in this area, particularly during press briefings.

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.

REPRODUCTION WORK ORDER

1. Originator

NAME Sharon Johnson BRANCH FRSS/DRSS EXTENSION 6396

2. SHORT DESCRIPTION (Include Docket No., Insp. No. or key reference number)

50-293189-11

3. INSTRUCTIONS

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 Cys of originals 12 Cys 766/766-A Forms
22 Cys of entire package w/o bcc's 12 Cys NRC:1 Form 6
32 ~~12~~ Cys of entire package with bcc's SPECIAL INSTRUCTIONS:
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 Cys of report only
 Cys of Licensee's letter dtd
1 Cys of Enf. Ltr with bcc's (w/o encl for Management Assistant)
12 Cys of Inspector's Evaluation Memo and/or Region 1 Forms 1 and 2

b. DISTRIBUTION

1 OSS (Original Concurrence Copy) 12 RIDS 32 Other
 25 Cnde
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2 State Copy 1 Resident Inspector
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4. URGENT REQUEST

APPROVAL _____ DATE _____

5. RETURN COMPLETED WORK TO:

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11-2-89

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7. Date Dispatched: _____