

U. S. Nuclear Regulatory Commission  
Region I

Docket/Report: 50-293/92-07 License: DPR-35

Licensee: Boston Edison Company  
RFD #1, Rocky Hill Road  
Plymouth, Massachusetts 02360

Inspection at: Pilgrim Nuclear Power Station, Plymouth, Massachusetts

When: May 27-29, 1992

Inspectors: E. C. McCabe, for 7/2/92  
J. Lusher, EP Specialist date

C. Gordon, Sr. EP Specialist  
L. Eckert, EP Specialist  
N. Dudley, Sr. Resident Inspector, Seabrook  
D. Florek, Sr. Operations Engineer, DRS  
D. Kern, Resident Inspector, Pilgrim  
E. McCabe, EP Section Chief

Approved: E. C. McCabe 7/2/92  
E. McCabe, Chief, Emergency Preparedness date  
Section, Division of Radiation Safety  
and Safeguards

Scope

Routine, announced Emergency Preparedness (EP) inspection and observation of the annual, partial-participation, annual emergency exercise.

Results

Exercise performance showed the ability to protect public health and safety. The performance of the Nuclear Operations Supervisor, who provided extensive and frequent briefings to Control Room personnel on plant status and future plans of action, was an exercise strength. No violations of NRC requirements were found. An exercise weakness was identified: an announcement to licensee and Massachusetts personnel in the EOF erroneously stated that there was fuel damage with a fission product release in progress. Also, that faulty communication was consistent with the Site Area Emergency Notification Forms, which would be sent to local communities in an actual emergency. Those forms indicated that a release was in progress and that protective actions had been recommended by the licensee. Thus, a more serious event than scenario conditions depicted was being communicated. In addition, several minor areas for improvement were identified.

## DETAILS

### 1.0 Persons Contacted

The following licensee personnel attended the exit meeting held on May 29, 1992.

R. Anderson, Senior Vice President, Nuclear  
E. Boulette, Vice President, Nuclear Operations  
P. Cafarella, Mechanical and Engineering Division Manager  
R. Cannon, Senior Compliance Engineer  
G. Davis, Executive Vice President, BECO  
N. Desmond, Compliance Division Manager  
S. Hook, Refuel Floor Manager  
E. Kraft, Jr., Plant Manager  
T. Kelley, Sr. Emergency Planner-Corporate and Public Information  
D. Landahl, EP On-site Division Manager  
R. Markovich, EP Off-site Division Manager  
C. Mathis, Nuclear Management Support Department Manager  
S. McCain, Emergency Planner, Radiological  
J. Merlino, Emergency Preparedness Exercise Coordinator  
D. Pierce, Deputy Section Manager, Maintenance  
W. Rothert, Director, Nuclear Administration  
R. Varley, Emergency Preparedness Department Manager  
C. Walker, Consultant

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

### 2.0 Emergency Exercise

The Pilgrim annual, partial-participation emergency exercise was held on May 28, 1992 from 7:30 a.m. to 1:30 p.m.

#### 2.1 Pre-exercise Activities

Exercise objectives were submitted to NRC Region 1 on February 28, 1992. The complete scenario package was submitted on March 26, 1992. NRC review found the following information unavailable: plant parameters after T=300 minutes, expected core assessment, plan of-the-day summary, in-plant area maps for radiological surveys, location of radiation detectors and floor plans, off-site field data for radiation monitoring teams, plume displays, and public information and rumor control messages. On April 16, 1992, the inspectors held a telephone discussion with the licensee's EP staff to discuss the review and request more information. The licensee then provided the additional information. Related scenario revisions were provided on May 27, 1992, one day prior to the exercise.

On May 27, 1992, NRC observers attended a licensee briefing, participated in the discussion of response actions expected, and were briefed on proposed changes. It was determined that the scenario would adequately test portions of the Emergency Plan and Implementing Procedures and allow licensee personnel to demonstrate areas previously identified for corrective action.

The following area for improvement was identified:

- Completeness of scenario submittals and timeliness of scenario revisions.

## 2.2 Exercise Scenario

The scenario included the following simulated events:

- Drywell unidentified leak rate in excess of 5 gpm.
- Drywell pressure increase above scram set point.
- Inability to maintain drywell pressure less than 2.5 psig.
- Rupture of "A" main steam line outside primary containment with failure of main steam line isolation valves to close.
- Unusual Event, Alert, and Site Area Emergency conditions.
- Low-level radiological release to the turbine building.
- Release termination, plant stabilization, and recovery.

## 2.3 Activities Observed

The NRC observed the activation and augmentation of the Emergency Response Facilities (ERFs) and actions of the Emergency Response Organization (ERO). The following were observed.

1. Selection and use of control 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.

## 2.4 Exercise Finding Classifications

Inspection findings were classified, where appropriate, 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 does not, alone, constitute 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.

## 2.5 Exercise Observations

The NRC team noted that the activation and utilization of the Emergency Response Organization (ERO) and Emergency Response Facilities (ERFs) were generally consistent with the Emergency Plan and Emergency Plan Implementing Procedures. The following exercise observations were made in the ERFs.

### Simulator Control Room (SCR)

SCR personnel demonstrated detailed knowledge of the implementation of the Emergency Operating Procedures (EOPs) and Emergency Plan Implementing Procedures, and made timely notifications after declaration of emergency conditions.

Control Room staff augmentation was effective. Strong Operations performance resulted in proactive accident mitigation activities and anticipation of changes in plant parameters.

The following exercise strength was observed.

- The Nuclear Operations Supervisor provided extensive and frequent briefings to Control Room personnel on plant status and plans of action.

No exercise weaknesses were identified.

The following areas for improvement were identified.

- Feedback to the simulator controllers and operators that in-plant assignments were completed by Damage Repair Teams was not evident throughout the exercise.

- The SCR staff did not recognize that, once the Technical Support Center (TSC)/Operational Support Center (OSC) was activated, task control of in-plant repair activities was to be accomplished by the TSC/OSC.

#### Technical Support Center (TSC)

The TSC was activated quickly. The Emergency Plant Manager's action board was concise, with priorities and status of actions necessary for mitigation displayed. There were thorough discussions during supervisor meetings, and TSC briefings were regular and purposeful. Positive direction was given to engineering and support staff, and the availability of equipmen, and trending was good.

No exercise strengths or areas for improvement were identified.

#### Operational Support Center (OSC)

OSC activities were performed efficiently. Damage Control Teams were well briefed as to task, turn-back dose, contamination levels, protective clothing, and radiation levels. OSC supervision was noted to anticipate in-plant assignments and ensure readiness of teams prior to dispatch. OSC status boards were well maintained and clearly displayed priorities throughout the exercise.

No exercise strengths, weaknesses, or areas for improvement were identified.

Previous areas for improvement were acceptably demonstrated.

#### Emergency Operations Facility (EOF)

Actions demonstrated by personnel in the EOF were generally well prioritized and coordinated by the Emergency Director (ED). Information flow between support staff allowed response actions to be carried out effectively. This included close interface with response personnel from the Commonwealth of Massachusetts, who were present in the EOF. Licensee EOF personnel ensured that Commonwealth staff were provided with plant parameters relative to events, dose assessment evaluations, meteorological data and information contained in off-site notification forms. Also, the notification forms had been modified to remove the specification of provision of primary meteorological tower data and thereby allow secondary tower information reporting when primary tower data is unavailable. It was also observed that Commonwealth staff were aware of and sought out event information, including meteorological data.

No exercise strengths were identified.



An exercise weakness (50-239/92-07-01) was identified based on the following:

- In the 12:00 noon briefing, the Emergency Director erroneously announced to the licensee staff and to the Commonwealth of Massachusetts responders in the EOF that there was apparent fuel damage and a fission product release in progress. Also, the Site Area Emergency Initial Notification Form and the 11:50 a.m. Follow-Up Notification Form identified a radioactive release in progress with no quantification or off-site dose projection. (The Follow-Up Notification did state that field teams had detected no radioactivity.) Further, when Commonwealth responders are in the EOF, as was the case, the first page of the Notification Forms states that Boston Edison's Protective Action Recommendation (PAR) has been provided to those Commonwealth responders, literally indicating that a PAR has been made. In this case, the Commonwealth's responders in the EOF appeared aware of the low level of this simulated release from a steam leak. But, once the Emergency Director's signature is obtained, the first page of the Notification Form is provided to the Commonwealth EOC and to local communities. In an actual emergency, Notification Forms describing an unquantified radiation release and the provision of a PAR might prompt an unwarranted off-site reaction when no protective action recommendation has been made or is appropriate.

The following areas for improvement were identified:

- Prior to entering Recovery, it was not clear to NRC observers how "long term core cooling available" was determined/defined in accordance with EP-IP-520.
- The EOF dose assessment staff appeared to be having problems in evaluating meteorological data for use in bounding calculations.

#### Media Center

The Media Center was activated and several news briefings were conducted. The Media Spokesperson was knowledgeable of the plant and its operation.

No strengths or weaknesses were identified.

The following areas for improvement were identified:

- The procedural requirements for establishing habitability prior to activation of the Media Center in downtown Plymouth delayed the activation of the center.
- The licensee's spokesperson had difficulty responding to questions which could have been more readily answered if better graphics were available.

### 3.0 Licensee Action on Previously Identified Items

(Closed) Inspector Follow-up Item 50-293/91-28-01: The concern involved a Health Physics member of the team assigned to perform High Pressure Coolant Injection pump repairs, who on his own initiative did not follow instructions from OSC management or as prescribed by the Radiation Work Permit regarding donning of protective clothing for contamination control. The licensee stated in its letter of March 3, 1992: "To aid in precluding such occurrences in the future, the circumstances associated with this occurrence will be discussed in future training sessions for exercise participants. The training will stress the importance of thoroughly communicating player/participant actions to ensure these actions are correctly perceived by the observers and evaluators." During this exercise, diligent adherence to procedures was evident. No further concerns were identified.

Also, all other previous areas for improvement were effectively demonstrated and not repeated.

### 4.0 Licensee Critique

On May 29, 1992 the NRC team attended the licensee's exercise critique. The Drill and Exercise Coordinator summarized the licensee's observations from the exercise. The presentation was documented in a draft report, which was provided to the critique attendees. The report was complete in that it included a list of items to be addressed by the licensee. However, items were not prioritized or categorized as to importance, and it was not evident which items the licensee considered to be more meaningful.

### 5.0 Exit Meeting

On May 29, 1992 the NRC team met with the licensee representatives listed in Detail 1.0 of this report. Team observations were summarized.

The licensee was informed of the following:

- That adequate protection of public health and safety had been demonstrated.
- That previous concerns had been addressed and resolved.
- That no violations were found.
- That there was a weakness in the communication of emergency event status by the ED, with the Initial Notification Form also being a potential communication problem.
- The areas for improvement that were identified.

Licensee management acknowledged the findings and indicated that they would evaluate and take appropriate action on the items identified.