

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-293/83-16

Docket No. 50-293

License No. DPR-35 Priority -- Category C

Licensee: Boston Edison Company

800 Boylston Street

Boston, Massachusetts 02199

Facility Name: Pilgrim Nuclear Power Station

Inspection At: Plymouth, Massachusetts

Inspection Conducted: June 28-30, 1983

Inspectors: *Raymond H. Smith*
Raymond H. Smith, Team Leader

7/27/83
date

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7/27/83
date

Inspection Summary: Inspection on June 28-30, 1983 (Report No. 50-293/83-16)

Areas Inspected: Routine, announced emergency preparedness inspection and observation of the licensee's annual emergency full scale exercise performed on June 29, 1983. The inspection involved 280 inspector-hours by a team of eight NRC Region I and NRC Contractor personnel.

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

DETAILS

1. Persons Contacted

The following licensee representatives attended the exit meeting on June 30, 1983:

J. M. Balentine, Vice President, Nuclear Operations
C. E. Bowman, Senior Radiological Engineer
P. T. Cafarella, Shift Technical Advisor
G. J. Davis, Staff Assistant to Nuclear Engineering Manager
J. M. Fulton, Staff Assistant to Vice President Nuclear Operations
E. T. Graham, Senior Plant Engineer
W. D. Harrington, Senior Vice President, Nuclear
W. R. Hoey, Senior Radiation Protection Engineer
P. T. Karatzas, Senior Radiological Engineer
T. S. Kirkham, Health Physicist (INPO)
B. P. Lunn, Health Physics Engineer
P. E. Mastrangelo, Chief Operations Engineer
C. J. Mathis, Station Manager
J. J. McClellan, Senior Radiological Engineer
G. M. McHugh, Jr., Nuclear Engineering Deputy Manager
R. Moody, Senior Project Manager (INPO)
A. V. Morisi, Manager, Nuclear Management Services
T. J. Nicholson, Assistant Security Supervisor
B. V. Nolan, Emergency Preparedness Coordinator
W. F. Olsen, Operations Training Supervisor
L. Oxen, Director, Operations Review
B. P. Roberts, Chief Maintenance Engineer
T. L. Sowdon, Environmental and Radiological Health and Safety Group
Leader
E. D. Testa, Program Manager, Emergency Planning Department (INPO)
A. R. Trudeau, Chief Radiological Engineer
S. N. Wynkoop, Manager, Public Affairs Department

2. Emergency Exercise

The Pilgrim Nuclear Power Station full scale exercise was conducted on June 29, 1983, from 7:00 a.m. until 4:30 p.m.

a. Pre-Exercise Activities

Prior to the emergency exercise, NRC Region I representatives had telephone discussions with licensee representatives to review the scope and content of the exercise scenario.

In addition, NRC Team observers attended a licensee briefing for licensee controllers and observers on June 28, 1983, and participated in the discussion of emergency response actions expected during the various phases of the scenario. The licensee specified the emergency response activities that would be simulated and also that controllers

would intercede in activities to prevent disturbing normal plant operations.

The exercise scenario included the following events:

- o A contaminated injured individual requiring hospitalization;
- o Main electrical transformer failure;
- o Inoperable safety relief valve;
- o Failure of valve mounting brackets causing penetration of the torus;
- o Loss of onsite AC power;
- o Reactor core degradation; and
- o Noble gas releases from the stack.

b. Exercise Observation

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:

- (1) Detection, classification, and assessment of the scenario events;
- (2) Direction and coordination of the emergency response;
- (3) Notification of licensee personnel and offsite agencies of pertinent information;
- (4) Communications/information flow, and record keeping;
- (5) Assessment and projection of radiological (dose) data and consideration of protective actions;
- (6) Provision for in-plant radiation protection;
- (7) Performance of offsite and in-plant radiological surveys;
- (8) Maintenance of site security and access control;
- (9) Performance of technical support;
- (10) Performance of corrective actions;
- (11) Performance of first aid and rescue;
- (12) Assembly and accountability of personnel; and
- (13) Management of Accident recovery operations.

The NRC team noted that the licensee'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 areas where the licensee's activities were thoroughly planned and efficiently implemented.

- o Emergency response personnel were knowledgeable in their assignments and the emergency procedures. Individuals were conscientious and in general, demonstrated that they were competent in performing their assigned function.
- o Personnel access was effectively maintained at the emergency facilities.
- o Notification of event classifications and protective action recommendations to off-site agencies were timely.
- o The contaminated injury was treated in accordance with procedures and the ambulance entrance to and exit from the protected area were timely.
- o The job planning and briefing of response teams included instructions regarding maintaining personnel exposures as low as reasonably achievable (ALARA).
- o The Public Information Office representative located at the Emergency Operations Facility (EOF) provided timely coordination of information flow.

The NRC team findings in areas for licensee improvement were as follows (the licensee also identified several of these areas in their critique of the exercise).

- o Provide additional forms for the Control Room Coordinator to record notification messages to off-site agencies and for recording incoming calls. Also locate communications in a centralized manner and equip telephones with indicator lights.
- o Some of the prints located in the Technical Support Center (TSC) were illegible and the available work space was not adequate.
- o Continuous accountability of personnel was not maintained in the Operations Support Center (OSC).
- o Personnel briefings were not conducted in a timely manner by the Emergency Director in the EOF.

- o Provide and maintain status boards at the EOF and the Recovery Organization Center to reflect emergency conditions and radiological information.
- o Evaluate the responsibilities and duties of the Radiation Emergency Team Coordinator (RETC) and also the space assignments, for the functions located in the EOF.
- o Protective action recommendations were not recorded for record purposes and the affected downwind sector was incorrectly identified during discussions with state representatives.
- o Direct the RETC staff to calculate off-site doses and compare them with field measurements, thus relieving the RETC of this task so he can devote more effort to radiological management.
- o One off-site monitoring team did not have use of a radio beyond one-half mile from the site and equipment cartons should be fastened inside the off-site monitoring team vehicles.
- o Revise the off-site monitoring team procedure to include open window radiation measurements for comparison with closed window measurements.
- o Offsite monitoring teams were not provided information regarding the emergency that was being made available to the public.
- o Designate a trained radio operator as a part of the Recovery Organization.
- o Provide improved communications between the Recovery Organization and the Station Emergency Facilities regarding radiological and plant conditions.
- o There was a lack of adequate scenario information regarding the status of the Standby Gas Treatment System (SBGT) during the loss of power.
- o Provide written messages for controllers to use regarding conditions rather than verbal messages which creates discussion between players and controllers. Also in one instance a controller corrected a mathematical error in calculations rather than permitting the players to discover and correct the error.
- o Provide an implementing procedure for use of the nomogram (Figure H.6-1) in the Emergency Plan for correlation of noble gas to fuel cladding failures.

c. Exercise Critique

The NRC team attended the licensee's post-exercise critique on June 30, 1983, during which key licensee controllers discussed their observations of the exercise. The licensee participants highlighted areas for improvement which the licensee indicated would be evaluated and appropriate action taken.

3. Exit Meeting and NRC Critique

Following the licensee's self-critique, the NRC team met with the licensee representatives listed in Section 1. The team leader summarized the observations made during the exercise and discussed the areas described in Section 2.b.

The licensee was informed that no violations were observed and although there were areas identified for improvement, the NRC team determined that within the scope and limitations of the scenario, the licensee's performance demonstrated that they could implement their Emergency Plan and Emergency Plan Implementing Procedures in a manner which would adequately provide for the health and safety of the public.

Licensee management acknowledged the findings and indicated that appropriate action would be taken regarding the identified improvement areas.