

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-277/87-36  
50-278/87-36

Docket No. 50-277  
50-278

License No. DPR-44 Priority \_\_\_\_\_ Category C  
DPR-56

Licensee: Philadelphia Electric Company  
2301 Market Street  
Philadelphia, Pennsylvania 19101

Facility Name: Peach Bottom Atomic Power Station

Inspection At: Delia, Pennsylvania

Inspection Conducted: December 7-9, 1987

Inspectors:

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12/24/87  
date

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Inspection Summary: Inspection on December 7-9, 1987 (Report Nos. 50-277/87-36 and 50-278/87-36)

Areas Inspected: Routine announced emergency preparedness inspection and observation of the licensee's annual partial participation emergency exercise performed on December 8, 1987. The inspection was performed by a team of seven NRC Region I and contractor personnel.

Results: No violations were identified. Emergency response actions 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 December 9, 1987:

Albright, T.L., Asst. to Plant Survey Group  
Beward, A.S., Personnel Safety Team  
Cotton, J.B., Superintendent, Operations  
Dawson, G.F., Station Maintenance  
Engler, A.M., Engineer  
Fulvio, A.A., Engineer  
Gallagher, R.R., Exercise Coordinator  
Garr, B.N., Engineer  
Gazda, N.L., Nuclear Health Physicist  
Grosh, S.S., Personnel Administrator  
Kankus, R.R., Director, Emergency Preparedness  
Leonard, D.A., Engineer  
McAllister, R.W., Personnel Safety Team Leader  
McCormick, M.J., Manager, Maintenance Department  
Micheal, E.L., Project Manager  
Roberts, S.R., Sr. Engineer, Nuclear Generation  
Schlecker, K.W., Emergency Planning Coordinator  
Suppiew, P.R., Nuclear Security Analyst  
Sware, R.M., Compliance Coordinator

The team observed and interviewed several licensee emergency response personnel, controllers and observers as they performed their assigned functions during the exercise.

### 2.0 Emergency Exercise

The Peach Bottom partial participation exercise was conducted on December 8, 1987 from 8:30 a.m. to 4:00 p.m. there was limited participation by Pennsylvania Bureau of Radiation Protection and Maryland Emergency Management and Civil Defense Agency personnel in the Emergency Operations Facility.

#### 2.1 Pre-exercise Activities

Prior to the emergency exercise, NRC Region I representatives held meetings and had telephone discussions with licensee representatives to discuss objectives, scope and content of the exercise scenario. As a result, changes were made in order to clarify certain objectives, revise certain portions of the scenario and ensure that the scenario provided the opportunity for the licensee

to demonstrate those areas previously identified by NRC as in need of corrective action.

NRC observers attended a licensee briefing on December 7, 1987, and participated in the discussion of emergency response actions expected during the various phases of the scenario. The licensee stated that controllers would intercede in exercise activities to prevent scenario deviation or disruption of normal plant operations.

The exercise scenario included the following events:

- Elevated air ejector radiation monitor level;
- Large break in reactor recirculation pump;
- Core spray pump discharge line rupture;
- Response to contaminated/injured personnel;
- Fire in auxiliary boiler building;
- Declaration of Unusual Event, Alert, Site Area Emergency and General Emergency classifications;
- Calculation of offsite dose consequences; and
- Recommendation of protective actions to state officials.

## 2.2 Activities Observed

During the conduct of the licensee's exercise, the 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 scenario events;
2. Direction and coordination of the emergency response;
3. Augmentation of the emergency organization and response facility activation;
4. Notification of licensee personnel and offsite agencies of pertinent plant status information;
5. Communications/information flow, and record keeping;

6. Assessment and projection of offsite radiological dose and consideration of protective actions;
7. Provisions for inplant radiation protection;
8. Performance of offsite and inplant radiological surveys;
9. Maintenance of site security and access control;
10. Performance of technical support, repair and corrective actions;
11. Assembly, accountability and evacuation of personnel;
12. Preparation of information for dissemination at the Emergency News Center;
13. Performance of first aid and rescue of injured individuals;
14. Performance of firefighting activities; and
15. Management of recovery operations.

### 3.0 Exercise Observations

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 generally consistent with their emergency response plan and implementing procedures.

#### 3.1 Exercise Strengths

The team also noted the following actions that provided strong positive indication of their ability to cope with abnormal plant conditions:

- Direction and control provided by managers of each emergency response facility were effective.
- Personnel briefings conducted in the OSC provided teams with current status on plant conditions and radiation levels.
- Coordination of activities in the TSC provided effective and timely resolutions to most problems.
- Development and utilization of field teams was effective in terms of team briefings, prepositioning of teams in the field, and direction provided by dose assessment staff to obtain data.

- Use of diagrams and charts to describe plant information in press releases is a good tool to easily explain events which have occurred.

### 3.2 Exercise Weaknesses

The NRC team identified the following areas where weaknesses were observed which could have degraded the response and should be evaluated by the licensee for corrective action. These items are tracked as Inspector Follow-up Items (IFI).

50-277/87-36-01 and 50-278/87-36-01: Notifications to offsite authorities following declaration of the Unusual Event and Alert classifications were delayed and not made in accordance with EP-102 and EP-103. Also, it was necessary for a single communicator to provide outgoing messages in addition to being assigned the function of answering the OMNI telephones, commercial telephones, load dispatcher line, and activate pager devices.

50-277/87-36-02 and 50-278/87-36-02: The following concerns were observed among the Control Room staff in implementing procedure EP-101, "Classification of Emergencies":

- The Alert classification was not declared until prompted by the controller;
- The Emergency Director was observed using his own previously prepared, uncontrolled summary table or matrix of initiating conditions and Emergency Action Levels (EAL); and
- Confusion was observed on how to use the General Condition EAL since it does not relate specific instrument readings or plant specific conditions to emergency classifications.

50-277/87-36-03 and 50-278/87-36-03: Following turnover in the OSC from the OSC Manager to the Auxiliary Operator deficiencies were observed in direction, control, and communications to inplant teams.

50-277/87-36-04 and 50-278/87-36-04: During the medical drill, an injured individual was left unattended in an area of high airborne radioactive material and little consideration was given by rescuers to proper use of respiratory equipment and protective clothing for contamination control.

50-277/87-36-05 and 50-278/87-36-05: Coordination and communication to ensure timely arrival of the offsite ambulance was inadequate in that approximately 75 minutes elapsed between control room notification of the injury and ambulance arrival. This has a significant worker safety impact since the injury had the potential

to be life threatening and special medical attention was immediately necessary.

#### 4.0 Licensee Actions on Previously Identified Items

- 4.1 The following item was identified during a previous inspection (Inspection Report Nos. 50-277/86-15 and 50-278/86-16). Based upon observations made by the NRC team this item was not acceptably demonstrated and remains open.

(OPEN) 50-277/86-15-10 and 50-278/86-16-10: The facility areas designated as the OSC inhibit an integrated and coordinated response by augmented support staff. Although the licensee has expanded the area, the basic functions of OSC management, direction and control, health physics support, team briefings, and use of status boards cannot be efficiently implemented because they are carried out in several different locations, i.e., primary OSC, auxiliary OSC, chemistry office, and maintenance shop.

- 4.2 The following items were identified during previous inspection (Inspection Report Nos. 50-277/86-15 and 50-278/86-16). Based upon observations made by the NRC team during the exercise the following open items were acceptably demonstrated and are closed:

(CLOSED) 50-277/86-15-01, 50-278/86-16-01: Dose assessment operators lacked thorough training in the computer model and basic health physics principles.

(CLOSED) 50-277/86-15-02, 50-278/86-16-02: The performance of the dose assessment team was observed to be non-integrated.

(CLOSED) 50-277/86-15-03, 50-278/86-16-03: Discussions of protective action recommendations did not consider essential information.

(CLOSED) 50-277/86-15-04, 50-278/86-16-04: The control room was not adequately staffed with the required players for part of the exercise.

(CLOSED) 50-277/86-15-05, 50-278/86-16-05: Confusion was observed in the transfer of authority in that the control room was not aware that the Emergency Director function was turned over to the TSC.

(CLOSED) 50-277/86-15-06, 50-278/86-16-06: The high range monitor was used by TSC and EOP staff for dose assessment, logging and tracking purposed instead of the low range monitor.



(CLOSED) 50-277/86-15-07, 50-278/86-16-07: TSC status boards were observed to be deficient or do not provide for critical information to be displayed.

(CLOSED) 50-277/86-15-08, 50-278/86-16-08: Technical staff in the TSC were not effectively utilized in that all TSC personnel were instructed to focus their attention on only one specific problem at a time.

(CLOSED) 50-277/86-15-09, 50-278/86-16-09: The medical team did not quickly or correctly assess the medical status of the injured individual.

(CLOSED) 50-277/86-15-11, 50-278/86-16-11: Public address announcements near the OSC and other high noise areas throughout the plant are not clearly audible.

(CLOSED) 50-277/86-15-12, 50-278/86-16-12: Conservatism was not demonstrated when issuing protective action recommendations to Pennsylvania and Maryland.

## 5.0 Licensee Critique

The NRC team attended the licensee's post-exercise critique on December 9, 1987, during which the key licensee controllers discussed observations of the exercise. The licensee indicated these observations would be evaluated and appropriate corrective actions taken.

Specific improvement areas which were identified by the licensee related to: (1) untimely declaration of the Alert Classification; (2) poor communications to the ambulance causing a delayed response; (3) inadequate size and space of OSC; (4) sample handling problems during PASS procedure; and (5) EOF log books not maintained properly to allow reconstruction of events.

## 6.0 Exit Meeting and NRC Critique

The NRC team met with the licensee representatives listed in Section 1 of this report at the end of the inspection. The team leader summarized the observations made during the exercise.

The licensee was informed that previously identified items were adequately addressed and no violations were observed. Although there were areas identified for corrective action, 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 protective measures for the health and safety of the public.

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

At no time during this inspection did the inspectors provide any written information to the licensee.