

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos: 50-387/89-02 & 50-388/89-02

Docket Nos: 50-387 & 50-388

License Nos: NPF-14 & NPF-22 Priority -- Category C

Licensee: Pennsylvania Power & Light Company
2 North Ninth Street
Allentown, Pennsylvania 18101

Facility Name: Susquehanna Steam Electric Station, Units 1 & 2

Inspection At: Berwick, Pennsylvania

Inspection Conducted: February 22-23, 1989

NRC Team Members:

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3/13/89
date

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3/14/89
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Inspection Summary: Inspection on February 22-23, 1989
(Report Nos. 50-387/89-02 & 50-388/89-02)

Areas Inspected: Routine announced emergency preparedness inspection and observation of the licensee's unannounced full participation annual emergency preparedness exercise conducted on February 22-23, 1989. The inspection was performed by a team of six NRC Region I, headquarters, and contractor personnel.

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

DETAILS

1.0 Persons Contacted

The following State and licensee representatives attended the exit meeting held on February 23, 1989.

Blakeslee, J. A., Assistant Plant Superintendent
Byram, R. G., Plant Superintendent
Craven, A. W., Public Information Director
Donnelly, M. F., Assistant Unit Supervisor
Doty, R. L., Supervisor, Radiological and Environmental Services
Dressler, B. N., Nuclear Emergency Planner
Edwards, J. V., P & A Supervisor
Gallagher, G. E., Security Training Instructor
Kalter, C. J., Radiological Group Supervisor
Lowthert, W. H., Manager, Nuclear Training
Maingi, S. P., PA. BRP
Malek, F. G., Security Training Supervisor
McGlynn, P. J., Health Physicist
Miltenberger, J. R., Manager, Nuclear Safety Assessment
Minneman, J. M., Supervisor, Nuclear Emergency Planning
Riley, H. L., Supervisor, Health Physics/ Chemistry
Stotler, R. L., Security Supervisor
Taylor, P. E., Shift Technical Assistant
Webb, H. L., Supervisor, Nuclear Maintenance Service
Widner, T. E., Senior Health Physicist
Williams, J. K., Unit Supervisor
Woodshick, H. D., Special Assistant to the President

During the conduct of the inspection, other licensee emergency response personnel were interviewed and observed. Subsequently, the Commonwealth of Pennsylvania, Counties of Luzerne and Columbia, and 27 local towns participated. The Federal Emergency Management Agency (FEMA) observed all offsite activities.

2.0 Emergency Exercise

The Susquehanna Steam Electric Station unannounced full-participation exercise was conducted on February 22-23, 1989, from 2:00 p.m. until 12:30 a.m.

2.1 Pre-exercise Activities

The exercise objectives, submitted to the NRC Region I on November 18, 1988 were reviewed and, following revision, determined to adequately test the licensee's Emergency Plan. On December 12, 1988 the licensee submitted the complete scenario package for NRC review and evaluation. Region I representatives had telephone conversations and met with the licensee's emergency preparedness staff to discuss the scope and content of the scenario.

As a result, revisions were made to the scenario and supporting data provided by the licensee. It was determined that the revised scenario would provide for the adequate testing of major portions of the Emergency Plan Implementing Procedures (EPIP) and also provided 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 February 22, 1988 and participated in the discussion of emergency response actions expected during the scenario. Suggested NRC changes to the scenario were made by the licensee and were also discussed during the briefing. The licensee stated that certain emergency response activities would be simulated and indicated in the scenario that controllers would intercede in exercise activities to prevent scenario deviations or disruption of normal plant operations.

The exercise scenario included the following events:

- Medical response and transportation to hospital of contaminated/injured individual;
- Security threat to Containment Instrument Gas (CIG) System;
- Explosion leading to loss of Reactor Water Cleanup System;
- Loss of Coolant Accident (LOCA);
- Fuel damage and high containment radiation levels;
- Offsite release of radioactivity to the environment;
- Declaration of Unusual Event, Alert, Site Area Emergency, and General Emergency classifications;
- Calculation of offsite dose consequences; and
- Recommendation of protective actions to offsite officials.

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 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;

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 offsite and in-plant radiological surveys;
8. Maintenance of site security and access control;
9. Performance of technical support, repair and corrective actions;
10. Performance of first aid and rescue;
11. Assembly and accountability of personnel;
12. Provisions for communicating information to the public; and
13. Management of recovery operations.

3.0 Exercise Observations

The NRC team noted that the licensee's activation and augmentation of the emergency organization, activations 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:

1. Positive command, control, decisionmaking, and use of staff was demonstrated by the Emergency Director in the TSC and by the Recovery Manager in the EOF;
2. Communication and notifications between the emergency response facilities was efficient and transmissions via portable radios was much improved;
3. Use of the training simulator provided continuous, realistic challenges to operations staff and allowed emergency response roles to be implemented more effectively;
4. Coordination and positioning of offsite field teams in the TSC and EOF was well planned and provided essential plume tracking information to dose assessment staff.

3.2 Exercise Weaknesses

The NRC team identified the following exercise weaknesses which require corrective action. An exercise weakness is a finding that the licensee's demonstrated level of preparedness could have precluded effective implementation of the emergency plan in the event of an actual emergency in the area observed.

1. Although player response was generally appropriate, in several instances it was observed that emergency planning procedures were not used or followed. Examples included inplant repair teams dispatched without health physics support or survey instrumentation, checklists in TSC activation and turnover procedures not used, documentation of contaminated/injured victim not provided to hospital during medical drill, dose assessment and protective action recommendation procedures not adequately followed in the EOF, and OSC EPP's not used (50-387/89-02-01; 50-388/89-02-01).
2. The protective action recommendation (PAR) was not provided to the Commonwealth of Pennsylvania until 35 minutes after the General Emergency was declared. While the PAR that was made was appropriate, it appeared to be based primarily on field data. IE Information Notice NO. 83-28, "Criteria for Protective Action Recommendations for General Emergencies" requires a prompt PAR following declaration of a General Emergency. Consideration of degrading plant conditions, the containment source term, and evacuation time estimates prior to the release could have improved the timeliness (50-387/89-02-02; 50-388/89-02-02).

3.3 Areas For Improvement

Although these findings did not have a significant negative impact on overall performance during the exercise, they should be evaluated and corrected by the licensee.

1. Delays were encountered in initial notifications of the corporate emergency organization.
2. Records of event notification reports were found to contain erroneous information in the non-technical description section.
3. An appropriate member of the licensee's response organization was not assigned to communicate information to the NRC via the Health Physics Network (HPN).
4. The present methodology used for OSC activities and role of the OSC Coordinator was not meaningful in the overall emergency response. As a consequence, additional noise and confusion was observed during operation of the TSC.

3.4 Other Areas Requiring Corrective Actions

The NRC team identified the following areas where corrective actions are also necessary. These areas relate to review of the Emergency Plan and implementing procedures and not to exercise performance.

1. The Security Alert Emergency Action Level (EAL) does not conform with the NRC guidance for security event initiating conditions. This EAL is overly restrictive and cannot be triggered unless a situation arises in which "personnel commandeering non-vital areas of the plant with shift supervisors evaluation" is found. NRC guidance specifies an ongoing security compromise as the Alert classification. Although in the exercise the emergency was properly classified, the licensee's EAL did not help in the classification. The licensee should evaluate this EAL, as well as other EAL's, for conformance to NRC guidance to ensure that all EAL's are clear and unambiguous (50-387/89-02-03; 50-388/89-02-03).
2. The present methodology identified in EP-IP-033 for formulating PAR's is not consistent with the NRC guidance published in IE Information Notice No. 83-28. EP-IP-033 uses dose assessment results as the primary consideration in PAR development and could prevent the licensee from making a PAR prior to a release of radioactive material. The IP further states that the preferred PAR is to recommend either a 360 degree, 10 mile shelter or evacuation based upon a Commonwealth directive and provides the option to consider affected sectors. It does not, however, adequately detail how affected sectors will be factored into the overall recommendation. It is incumbent on the licensee to promptly make a meaningful PAR based upon plant conditions and field measurements if available, independent of the expected State response. The licensee acknowledged that the present methodology for formulating PAR's is not consistent with federal guidance and agreed to revise the procedure accordingly. This item is unresolved (50-387/89-02-04; 50-388/89-02-04).
3. During the exit interview, in response to the exercise weakness regarding lack of procedure use (section 3.2.1), the Assistant Plant Superintendent indicated that the reason that many staff members did not utilize implementing procedures was due to changes in methodology and philosophy and that the procedures had not yet been revised to reflect these changes. The training program has been revised resulting in the discrepancy. The inspector indicated that prompt action is necessary to bring those procedures up to date. This item is unresolved (50-387/89-02-05; 50-388/89-02-05).

4.0 Licensee Action on Previously Identified Items

Based upon discussions with licensee representatives, examination of procedures and records, and observations made by the NRC team during the exercise, the items identified during the previous emergency exercise were acceptably demonstrated and are closed:

(CLOSED) 50-387/88-06-01; 50-388/88-05-01: During the medical drill, unnecessary movement of accident victims had the potential to aggravate injuries.

(CLOSED) 50-387/88-06-03; 50-388/88-05-03: Inconsistencies in communications and information flow of key events.

(CLOSED) 50-387/88-06-04; 50-388/88-05-04: Portable radio and transmission problems identified in many plant areas.

(CLOSED) 50-387/88-06-05; 50-388/88-05-05: Operational problems associated with use of the post accident sampling system.

(CLOSED) 50-387/88-06-06; 50-388/88-05-06: Inadequate direction and control of the OSC and attitude concerns of crafts personnel.

5.0 Licensee Critique

The NRC team leader attended the licensee post exercise critique on February 23, 1989 during which the licensee's lead controller discussed observations of the exercise. It was noted that the licensee's critique did not identify areas in need of corrective action similar to those identified by the NRC team. These include delayed PAR's, inadequate PAR procedure, and lack of implementing procedure use in several response areas (50-387/89-02-06; 50-388/89-02-06). The licensee indicated that these observations would be evaluated and appropriate corrective actions taken.

6.0 Exit Meeting

Following the licensee's self-critique, the NRC team met with the licensee representatives listed in Section 1 of this report. Team observations made during the exercise were summarized. In addition, on March 2, 1989, NRC staff held a conference call with the plant superintendent and other staff to further categorize exercise findings.

The licensee was informed that previously identified items were adequately addressed and that 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 that would provide adequate protective measures for the health and safety of the public.

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

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