

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-317/89-20 & 50-317/89-22

Docket Nos. 50-317 & 50-318

License Nos. NPF-53 & NPF-69 Priority -- Category C

Licensee: Baltimore Gas and Electric Company
MD Rts 2 & 4, Post Office Box 1535
Lusby Maryland 20657

Facility Name: Calvert Cliffs Nuclear Power Plant, Units 1 & 2

Inspection At: Lusby, Maryland

Inspection Conducted: September 13-15, 1989

NRC Team Members: Craig Z. Gordon
C. Z. Gordon, Regional Team Leader

9/26/89
date

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10/3/89
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Inspection Summary: Inspection on September 13-15, 1989
(Report Nos. 50-317/89-20 & 50-318/89-22)

Areas Inspected: Routine announced emergency preparedness inspection and observation of the licensee's full-participation annual emergency preparedness exercise conducted on September 14, 1989. The inspection was performed by a team of five NRC Region I 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 September 15, 1989.

- M. E. Bowman, General Supervisor, Planning and Support
- G. C. Creel, Vice President- Nuclear
- R. E. Denton, Manager, Quality Assurance Services Division
- R. C. Dernoga, Manager, Facilities Management
- T. E. Forgette, Supervisor, Emergency Planning Unit
- D. G. Frazier, Emergency Planner
- F. G. Kramme, Emergency Planning Analyst
- W. J. Lippold, General Supervisor, Technical Services Engineering
- N. J. Millis, General Supervisor, Radiation Safety
- T. N. Pritchett, General Supervisor- Technical Services
- K. W. Rogers, Supervisor, Video Services
- G. C. Rudigier, Emergency Planning Analyst
- L. B. Russell, Manager, Calvert Cliffs
- L. J. Smialek, Senior Plant Health Physicist
- B. A. Watson, Plant Health Physicist

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

2.0 Emergency Exercise

The Calvert Cliffs full-participation exercise was conducted on September 14, 1989, from 7:00 a.m. until 3:30 p.m. Subsequently, the State of Maryland and the counties of Calvert, Dorchester, and St. Mary's participated. The Federal Emergency Management Agency (FEMA) observed offsite activities.

2.1 Pre-exercise Activities

The exercise objectives, submitted to the NRC Region I on June 7, 1989 were reviewed and, following revision, determined to adequately test the licensee's Emergency Plan. On July 11, 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 revised scenario would provide for the adequate testing of major portions of the Emergency Plan Implementing Procedures (EPIP) 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 September 13, 1989 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:

- Offsite traffic accident causing medical response and transportation to hospital of contaminated/injured individual (FEMA observed MS-1 drill);
- Condensate storage tank rupture;
- Increasing in-plant radiation levels;
- Loss of HPSI pumps;
- Rapid increase of temperature in core exit thermocouples and core uncover;
- Offsite release of radioactivity to the environment;
- Declaration of Unusual Event, Alert, Site Area Emergency, and General Emergency classifications;
- Recommendation of protective actions to offsite officials; and
- Management of recovery operations.

The above events caused the activation of the licensee's onsite and offsite 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 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, 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 the licensee's ability to cope with abnormal plant conditions:

- Prompt recognition of initiating conditions and corresponding classification of events;
- Core damage assessment performed in the Technical Support Center was effectively accomplished and the information was quickly and continuously provided to the Emergency Operations Facility, Operations Support Center, and control room;
- Communications among TSC staff members were clear which resulted in proper assignment of special maintenance tasks; and
- Use of the new Operations Support Center was effective in implementing inplant repair and corrective actions by crafts personnel.

3.2 Exercise Weaknesses

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 being observed.

- Following declaration of the Site Area Emergency, it was not clear to response personnel who was responsible for transmitting notification messages to offsite authorities. As a result, official notification of the Site Area Emergency exceeded the 15 minute NRC requirement (50-317/89-20-01 and 50-318/89-22-01).

3.3 Areas for Improvement

An area for improvement is a finding that did not have a significant negative impact on overall performance during the exercise, but should be evaluated by the licensee for corrective action. The licensee conducted an adequate self-critique of the exercise which also identified some of these areas.

- Control room staff were unable to correctly verify information on the events associated with the offsite medical drill.
- During the medical response, problems were observed in establishing and maintaining a contamination control boundary.
- After the Alert and Site Area Emergency classifications, followup notifications transmitted from the TSC to the EOF were not confirmed by the TSC communications staff per Emergency Response Plan Implementing Procedure (ERPIF) 3.0.
- ERPIP 4.1.3, "TSC Director", is written in general terms and does not provide adequate detail for the TSC Director to effectively carry out emergency duties nor assign the response functions of Technical Analyst, Operations Analyst, Computer Maintenance personnel, and Chemistry Director. In addition, TSC status summaries were not provided to TSC personnel in accordance with this procedure.
- Emergency Operations Procedures (EOP) were not used by TSC personnel to check implementation by control room staff.
- Inconsistencies were found between status boards, control room panels, and ERPIP's regarding labeling and identification of the operating and high range main plant vent radiation monitors.
- Some press releases contained erroneous information and led to confusion in responding to media inquiries.
- During activation, the EOF experienced an actual temporary loss of primary and backup power. Onsite and offsite communications capability were not affected. Power to the Midas computer was lost and the licensee adequately implemented backup dose assessment methodology. However, overall habitability was affected due to loss of building lighting and ventilation. The licensee should review the surveillance program to ensure that EOF response capability can be maintained during a long term emergency. This item is unresolved (50-317/89-22-02 and 50-318/89-20-02).

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 not repeated with one exception.

- Staging the Control Room portion of the exercise outside the panel and display area detracts from realism and hinders response actions of shift staff with regard to recognition of degrading plant functions, communications, and notifications. Licensee representatives stated that plans were being made to move to the simulator for the 1990 annual exercise.

5.0 Exit Meeting and NRC Critique

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.

The licensee was informed that previously identified items were adequately addressed with the exception of control room staging 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.