

U. S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report Nos. 50-317/82-25  
50-318/82-21

Docket Nos. 50-317  
50-318

License Nos. DPR-53 Priority -- Category C  
DPR-69

Licensee: Baltimore Gas and Electric Company  
P.O. Box 1475  
Baltimore, Maryland 21203

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

Inspection At: Lusby, Maryland

Inspection Conducted: September 27-29, 1982

Inspectors: R. H. Smith  
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10/22/82  
date

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10/29/82  
date

Inspection Summary:

Inspection on September 27-29, 1982 (Report Numbers 50-317/82-25, 50-318/82-21)

Areas Inspected: Special announced emergency preparedness inspection and observation of the licensee's annual emergency exercise. The inspection involved 265 inspector hours by a team of 10 NRC Region I, NRC Headquarters, and NRC contractor personnel.

Results: No violations were identified.

## DETAILS

### 1. Persons Contacted

The following licensee representatives attended the exit meeting on September 29, 1982:

G. V. Bresnick, Manager, Real Estate and Office Services  
G. C. Creel, Manager, Production Maintenance  
R. E. Denton, General Supervisor, Technical Services  
R. M. Douglass, Manager, Quality Assurance  
R. E. Hilbert, Supervisor, Communications System Engineering  
S. E. Jones, Jr., Assistant General Supervisor Training  
R. H. Kent, Manager, Project Management  
A. E. Lundvall, Vice President  
J. A. Maxzger, Media Relations Representative  
N. L. Millis, General Supervisor, Radiation Safety  
J. M. Moreira, Supervisor, Emergency Planning  
T. N. Pritchett, Principal Project Engineer  
G. F. Rogers, Jr., Manager, Corporate Communications  
L. B. Russell, Plant Superintendent  
J. A. Tiernan, Manager, Nuclear Power

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

### 2. Emergency Exercise

The Calvert Cliffs Nuclear Power Plant emergency small scale exercise was conducted on September 28, 1982, from 6:00 a.m. until 4:00 p.m.

#### a. Pre-exercise Activities

Prior to the emergency exercise, the NRC Region I representatives had telephone discussions with licensee representatives to review the scope and content of the exercise scenario. As a result, revisions were made by the licensee to improve plant and dose assessment data sheets, additional events were included in the exercise, and portions of the scenario were clarified.

In addition, NRC observers attended a licensee briefing for licensee controllers and evaluators on September 27, 1982, and participated in the discussion of emergency response actions expected during the various phases of the scenario. The licensee stated that certain emergency response activities would be simulated and that controllers would intercede in activities to prevent disturbing normal plant operations.

The licensee scenario included a single engine aircraft crash within the protected area; loss of offsite AC power; a small release of airborne radioactivity to the environment; an operational failure of the diesel generators; an injured individual requiring hospitalization; a contaminated individual; and notification/communications with offsite agencies. The emergency classes also fluctuated due to events within the scenario.

Based on the above findings, this portion of the licensee's exercise appeared to be acceptable.

b. Exercise Observation

During the conduct of the licensee's exercise, 10 NRC team members made detailed observations of the activation and augmentation of the emergency organization; establishment 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 events making up the scenario;
- (2) Direction and coordination of the emergency response;
- (3) Notification of licensee personnel and offsite agencies of pertinent information;
- (4) Assembly and accounting for licensee and contractor personnel and visitors;
- (5) Assessment and projection of radiological (dose) data and consideration of protective actions;
- (6) Provision of 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 repair and corrective actions;
- (11) Performance of first aid and rescue; and
- (12) Provision of information to the public.

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. However, the team did find areas for licensee improvement which are discussed below. (The licensee also identified most of these areas in their critique of the exercise.)

Response personnel did not utilize or request data results for the Noble Gas Monitor System; Containment Water Level Indicators; Post-accident Sampling System; and the Isokinetic Iodine Grab Sample Capability. Data results for the above should be included on the CR/TSC Plant Parameter Report form.

The in-plant announcement of the initial "Alert" classification was delayed about 20 minutes. All offsite agency notifications were performed in a timely manner; however, a delay was encountered when notification was made to the State of Maryland Division of Radiation Control and the State Civil Defense Agency during-off normal work hours, in that the licensee explained and discussed with the individual receiving the call that the Maryland State Police was the contact for both of the State organizations during periods other than normal working hours.

The Control Room (CR) did not inform the Technical Support Center (TSC) of some items relating to plant conditions, e.g., a problem with the ECCS Pump Room door.

The same radio frequency was assigned to Plant Security and the Plant Fire Brigade.

The auxillary feedwater flow was not established during the loss of AC power.

Offsite monitoring teams were not provided with information regarding plant status and meteorological conditions on a planned frequency.

Operators were dispatched from the CR to plant areas where radiological conditions had not been determined.

The Operational Support Center (OSC) lacked centralized command and control due to the functional areas assigned to the OSC not being directed by one individual.

Communications were difficult in the OSC due to the noise level created by a large number of individuals; telephone bells; and the plant paging system.

The Plant Parameter Status and condition reports also were not distributed to all functional areas in the OSC. The emergency teams being dispatched from the OSC were delayed for issuance of dosimeters, rather than the dosimeters being issued when the teams were assembled. During the major portion of the exercise the OSC was operated using only emergency lighting. The individuals assigned within the OSC during the exercise were able to cope with the conditions described above and performed in a proficient manner.

Although the radioactivity results provided to the individuals that were involved with handling the reactor coolant samples were considered to be high, the samples were not handled remotely.

The period of time between the report of a seriously injured person and treatment being provided was considered excessive. Part of the delay was because the emergency team members reporting to the Auxillary Building Control point in a timely manner were not qualified to perform the radiological monitoring required to enter the location of the injured individual. There was also a lack of communication between the team members, CR, OSC, and the Alternate Emergency Control Center (AECC) regarding the delays.

There was a lack of periodic briefings conducted in the Control Room to inform personnel of plant status and radiological conditions.

Identification tags were provided for players, controllers, evaluators, and observers prior to the exercise. During the exercise there were several players observed that were not identified.

The status boards in the AECC Status Center did not provide a method for historical data storage or trending of data or events. The information was posted promptly on the boards but previous information was also deleted.

The period of time between the report of an individual being contaminated and decontamination being started was considered excessive. Part of the delay was due to the same reasons described above for the injured individual since the same team responded to the scene for both

events. No respirators were worn by the team members arriving at the scene and no air samples were obtained. There was a lack of communication between the team members, CR, and the OSC. After a Health Physics Technician arrived at the scene the contamination on the individual was adequately evaluated and the decontamination was performed promptly. The Controller then reminded the team that additional followup was required because the contaminated individuals' dosimeters were off-scale, indicating possible high external whole body radiation exposure.

There was an adequate number of licensee controllers and evaluators during the exercise. There were isolated examples of what appeared to be prompting by some of the controllers. For exercises conducted in the future, licensee controllers should clarify for the observers when they are providing information to players that is outside of the prepared scenario content and when they are correcting players actions as a means of initiating a desired or required scenario activity.

c. Exercise Critique

The NRC team attended the licensee's post-exercise critique on September 29, 1982, during which key licensee controllers and evaluators discussed their observations of the exercise. The discussion included the period of time of about 25 minutes during which the exercise was delayed. The delay was due to an actual radiological event initiated by an Auxillary Building ventilation radiation monitoring alarm. The AECC remained staffed during the delay but other emergency facility locations released the exercise participants. The event was terminated by corrective actions being completed and the emergency exercise was resumed. About 15 minutes later several events occurred in the scenario including loss of offsite AC power and followed shortly by the report of the injured and contaminated individual. Functional activity problems were created because some of the emergency response exercise players had not yet returned to their assigned locations when the exercise was resumed.

The licensee evaluators highlighted areas for improvement which included most of those contained in Section 2.b of this report. A summary of the licensee's findings indicated that items had not been identified which would prevent the licensee from adequately protecting the health and safety of the public.

Discussions during the critique indicated that licensee management possessed sufficient understanding of the deficient areas to permit timely and effective improvements.

3. Exit Meeting and NRC Critique

Following the licensee's self-critique, the NRC team met with the licensee representatives listed in Section I. The team leader summarized the observations made during the exercise and discussed the areas where improvement should be made as described in Section 2.b. The team leader also requested that the licensee conduct an additional drill for the handling of a serious injury and for the handling of a contaminated individual and to inform the NRC Resident Inspector of the drill schedule.

Licensee management stated that based on their critique they had already determined the need to conduct the additional drills and would provide the NRC a schedule of the drills.

The NRC team leader discussed the effect on the exercise that was caused by the radiological event and also the unusual feature of the scenario regarding the fluctuation of the emergency classifications. It was also noted that the exercise activities and the licensee's critique were indicative of the adequate number of controllers and evaluators. The licensee was informed that within the scope and limitations of the scenario, their performance in the exercise demonstrated that they could implement their Emergency Response Plan and Emergency Response 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 evaluation and resolution of the identified improvement areas would begin immediately.