

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report Nos. 50-317/84-32  
50-318/84-32

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: November 26-30, 1984

Inspectors: P. Clemons 1/21/85  
P. Clemons, Radiation Specialist date

Approved by: M. Shanbaky 1/21/85  
M. Shanbaky, Chief, Facilities date  
Radiation Protection Section  
Radiation Protection Branch

Inspection Summary:  
Inspection on November 26-30, 1984 (Report Nos. 50-317/84-32 and 50-318/84-32)

Areas Inspected: Routine, unannounced safety inspection of the Radiation Protection Program including: purpose, exposure control, training, outstanding items, surveys, shipment of radioactive material, posting and labeling, procedures, source leak tests, and instrument calibration. This inspection involved 44 inspector-hours onsite by one regionally-based inspector.

Results: One violation was identified (failure to follow procedures).

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## DETAILS

### 1.0 Persons Contacted

#### 1.1 Licensee Personnel

L. Russell, Plant Superintendent  
N. Millis, General Supervisor, Radiation Safety  
P. Crinigan, General Supervisor, Chemistry  
R. Wenderlich, Supervisor, Operations Quality Assurance Auditing  
J. Carlson, Assistant General Supervisor, Radiation Control and Support  
P. Rizzo, Supervisor, Technical Training  
L. Smialek, Senior Plant Health Physicist

#### 1.2 NRC Personnel

D. Trimble, Resident Inspector

Other licensee personnel were contacted and interviewed during this inspection.

### 2.0 Purpose

The purpose of this routine inspection was to review the licensee's radiation protection activities with respect to the following elements:

- Review of Procedures;
- Review of Exposure Control;
- Review of Surveys;
- Review of Source Leak Tests;
- Review of Personnel Training;
- Review of Posting and Labeling;
- Review of Outstanding Items;
- Review of Instrument Calibrations; and
- Review of Shipments of Radioactive Material.

### 3.0 Status of Previously Identified Items

(Closed) Violation (317/83-23-01 and 318/83-23-01): Trailer in plant yard to the radwaste system. This item was withdrawn in a letter to the licensee dated March 15, 1984.

(Closed) Inspector Follow-up Item (317/84-13-01 and 318/84-13-01): Licensee's commitment to have qualification standards for dosimetry unit personnel by October 1, 1984. The Radiation Safety Section Training and Qualification Manual was reviewed and it was noted that qualification standards for dosimetry personnel had been incorporated into the manual.

(Closed) Inspector Follow-up Item (317/84-13-02 and 318/84-13-02): Review qualification of contractor rad control unit technicians. The licensee's qualification program for senior contractor technicians was reviewed. The program appeared to be adequate.

(Closed) Inspector Follow-up Item (317/84-13-03 and 318/84-13-03): Review air sample data for possible alpha contamination. Air sample data was reviewed, and the data did not indicate that alpha contamination was present.

(Closed) Inspector Follow-up Item (317/84-13-05 and 318/84-13-05): Review preparation and classification of wastes under 10 CFR 20.311. A transportation inspection (84-20) was conducted July 23-27, 1984 and the preparation and classification of wastes was reviewed at that time.

#### 4.0 Procedure Review

The adequacy and effectiveness of the licensee's procedures were reviewed against the criteria contained in Technical Specification 6.8, "Procedures," and Technical Specification 6.11, "Radiation Protection Program."

Procedures reviewed included:

"Special Work Permit," Procedure No. RSP 1-106;  
 "Radiological Surveys," Procedure No. RSP 1-101;  
 "Calvert Cliffs Radiation Safety Procedure Format," Procedure No. CCI-805C;  
 "Radioactive Source Control," Procedure No. RSP2-205;  
 "Calvert Cliffs General Orientation Training," Procedure No. CCI-602E;  
 "Radiation Safety Section Training and Qualification," Procedure No. CCI-617 (Draft Copy);  
 "Chem-Nuclear CNS 1-13G Cask Handling," Procedure No. RSP 2-206; and  
 "Operation and Calibration of Low Volume Air Sampler," Procedure No. RSP2-135.

The licensee's performance relative to these was determined by discussions with the Radiation Control-Ops Supervisor, the Materials Processing Supervisor, other appropriate licensee personnel, direct observation of activities, and examination of selected records.

Within the scope of this review, the following violation was identified.

On November 27, 1984, as the inspector toured the 5' elevation near the Unit 1 East Pen Room of the Primary Auxiliary Building (PAB), at least three contractor workers were observed performing minor maintenance



activities in a contaminated area. The Radiation Control-Ops Supervisor accompanied the inspector and he observed the violation at the same time as the inspector. The workers were performing the activities under Special Work Permit (SWP) No. 84-018.

The inspector noted that one worker performing the activity was straddling the Step-Off Pad, that is one foot was in the clean area and the other foot was in the contaminated area. This worker was wearing plastic shoe covers and cotton gloves. The other two workers wore plastic shoe covers, cotton gloves and lab coats.

SWP No. 84-018 required that lab coats, rubber gloves, cotton gloves and plastic shoe covers be worn.

Technical Specification 6.8, "Procedures," requires that procedures be established, implemented and maintained. Procedure No. RSP No. 1-106, "Special Work Permit," developed pursuant to the above, states, "The purpose of the Special Work Permit is to specify and describe the radiological controls associated with the operation to be performed..."

Special Work Permit (SWP) No. 84-018, issued on November 1, 1984, covering "entries into the controlled area to perform minor maintenance in areas..." where radiation and contamination levels were very low, contained certain protective clothing requirements, and it also contained the requirement for personnel working on the SWP to check in with the Radiation Control Shift Supervisor (RCSS).

It was also determined that the workers did not check in with the RCSS prior to starting work on November 27, 1984, as required by the SWP.

The failure to follow the requirements of SWP No. 84-018 represents a violation of Procedure No. RSP No. 1-106, "Special Work Permit" (84-32-01).

It must be acknowledged that the Radiation Control-Ops Supervisor immediately stopped all work. He reprimanded the Contractor Supervisor, and he required all involved to repeat the required training.

## 5.0 Exposure Control

The External Exposure Control Program was reviewed against the criteria contained in 10 CFR 20.101, "Radiation dose standards for individuals in restricted areas," and 10 CFR 20.102, "Determination of prior dose." The licensee's performance relative to these criteria was determined by interviewing a Principal Dosimetry Technician and by reviewing selected documents.

Within the scope of this review, no violations were identified.

## 6.0 Posting and Labeling

The licensee's program for area posting and control was reviewed against the criteria in 10 CFR 20.203, "Caution signs, labels, signals and controls."

The licensee's performance relative to these criteria was determined from a tour of the Controlled Areas and from discussions with the staff members.

Within the scope of this review, no violations were identified.

## 7.0 Surveys

The licensee's survey program was reviewed against criteria contained in 10 CFR 20.201, "Surveys."

The licensee's performance relative to these criteria was determined by discussion with the Radiation Controls-Ops Supervisor and by reviewing appropriate records.

Within the scope of this review, no violations were identified.

### Source Leak Test

Source leak tests were reviewed against criteria contained in Technical Specification 3/4.7.9. The licensee's performance relative to these criteria was determined from discussion with the Materials Processing Supervisor, the Radiation Control-Ops Supervisor, and review of appropriate records.

Within the scope of this review, the following was identified.

It was determined that source inventory and leak tests are required to be performed by Procedure No. RSP 2-205, "Radioactive Source Control." Technical Specification 3/4.7.9 requires leak testing at least once per six months. The record review on November 28, 1984, indicated that leak tests were being performed and the records showed a 10 Curie Cs-137 source located in a Source Well when, in fact, the source was located in the Rad Con Storage Area on the 69' elevation of the Primary Auxiliary Building (PAB). In addition, the records indicated three Cs-137 sources as having activities of about 100 millicuries when, in fact, the actual activities were about 1 microcurie. Also, there were two sources (Am-Be, 3 curies and Cs-137, 100 millicuries) in thirty-gallon drums in the Rad Con Storage area, and the drums were not labeled indicating the contents of the drums, and neither were written records readily available identifying the contents of the drums.

This will be reviewed during a subsequent inspection (317/84-32-02 and 318/84-32-02).

## 8.0 Training

The licensee's training program was reviewed against criteria contained in 10 CFR 19.12, "Instructions to Workers," ANSI N18.1, 1971, "Selection and Training of Nuclear Power Plant Personnel," and Training Instruction 10, "Written Examination Preparation, Administration and Grading."

The licensee's performance relative to these criteria was determined by discussion with a Training Instructor, and by review of documentation.

Within the scope of this review, the following was identified.

Training Instruction 10, "Written Examination Preparation, Administration and Grading," states in Section VII.D.3 that,

"Individuals who score less than the minimum acceptable standard for a given examination will be assigned appropriate additional study material and reexamined, unless waived by line supervision. A copy of the waiver will be attached to the grade summary sheet and kept as part of the program's records."

It was determined during this inspection that two Radiation Control Technicians scored less than the minimum acceptable standard for examinations given in August 1984. The technicians' line supervision requested that the two workers attend special makeup presentations. At the time of this inspection, the technicians had not attended a makeup presentation.

This will be reviewed during a subsequent inspection (317/84-32-03 and 318/84-32-03).

## 9.0 Shipments of Radioactive Material

The licensee's program for the transportation of radioactive material was reviewed against the criteria in 10 CFR 71.12, "General License: NRC Approved Package" and Procedure No. RSP2-206, "Chem-Nuclear CNS 1-13G Cask Handling."

The licensee's performance relative to these criteria was determined by interviewing the Supervisor Materials Processing and by reviewing appropriate documents.

Within the scope of this review, the following was identified.

Procedure No. RSP2-206, "Chem-Nuclear CNS 1-13G Cask Handling" requires in Section 3.1 that the "...present Certificate of Compliance (COC) be reviewed to insure that all conditions listed are adhered to." The licensee shipped 5,870 Curies of radioactive waste to Barnwell, South Carolina, in the 1-13G Cask on November 20, 1984, and the licensee does not have documentation to support the fact that all conditions listed in the COC were adhered to.



This will be reviewed during a subsequent inspection (317/84-32-04 and 318/84-32-04).

#### 10.0 Instruments and Equipment

Instruments and equipment were reviewed against the criteria contained in 10 CFR 20.202, "Personnel Monitoring," and applicable procedures.

The licensee's performance relative to these criteria was determined by discussions with an Instrument Repair Technician and by reviewing appropriate documents.

Within the scope of this review, the following was identified.

On November 27, 1984, a Thomas low volume vacuum pump (No. 165) was observed collecting an air sample in the Compacting Area on the 45' elevation in the PAB of Unit 1. The inspector noted that the pump was located about 25 feet from the sample head, that is the air sample head was attached to a 25-foot length of tubing.

Procedure No. RSP2-135, "Operation and Calibration of Low Volume Air Sampler," Section 3.1, requires that the pumps be calibrated at least semiannually and after maintenance. The calibration records for Pump No. 165 indicated that the pump was calibrated on October 19, 1983 and August 9, 1984. The records did not indicate that Pump No. 165 had been calibrated under the same condition that it was being used on November 27, 1984. The records indicated that the pump was calibrated with "no hose."

The inspector was informed by the Instrument Repair Technician and the Radiation Control-Ops Supervisor that pumps had been calibrated with "no hose," 25-foot lengths of hose and 50-foot lengths.

The Instrument Repair Technician provided the inspector data for several pumps that had been calibrated at the various hose lengths, and the data indicated there was no significant change in flow rates at the various lengths for any of the pumps.

Calibration data for Pump No. 165, at the various hose lengths, will be reviewed at a subsequent inspection to verify that there is no significant change in flow rates for the pump at the varying hose lengths (317/84-32-05 and 318/84-32-05).

#### 11.0 Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on November 30, 1984. The inspector summarized the purpose and scope of the inspection, and the inspection findings.

At no time during this inspection was written material provided to the licensee by the inspector.