

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-317/85-17  
50-318/85-15  
Docket No. 50-317  
50-318  
License No. 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

Inspection at: King of Prussia, Pennsylvania

Inspection conducted: July 1-3, 1985

Inspectors: Ronald R. Bellamy  
P. Clemons, Radiation Specialist

July 12, 1985  
date signed

Approved by: Ronald R. Bellamy  
M. Shanbaky, Chief  
PWR Radiation Safety Section

July 12, 1985  
date signed

Inspection Summary:

Inspection on July 1-3, 1985 (Report Nos. 50-317/85-17 and 50-318/85-15)

Areas Inspected: A special, in-office radiological safety inspection of licensee and NRC records and documents relevant to the allegations raised by a licensee employee on September 19, 1984. The inspection involved 20 in-office hours by one region based inspector.

Results: Two violations were identified (licensee permitted one employee to receive more than 1,250 millirem a quarter during two separate quarters without completing the applicable requirements of 20.101(b) and 20.102(b) & (c), paragraph 3; and the licensee failed to report the over exposure as required by 10 CFR 20.405, paragraph 4). This apparent overexposure, although in excess of certain federal limits, does not constitute a significant safety issue, since the individual's exposure was controlled less than 3,000 millirem per quarter, a limit that would have been authorized had appropriate paperwork been completed prior to the exposure.

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## DETAILS

### 1. Individual Contacted

#### a. Licensee Personnel

J. Tiernan, Manager, Nuclear Power Department  
L. Russell, Plant Superintendent  
N. Millis, General Supervisor, Radiation Safety

#### b. NRC Personnel

T. Elsasser, Section Chief, DRP  
J. Gutierrez, Region I Counsel  
T. Foley, Senior Resident Inspector

### 2. Purpose

The purpose of this inspection was to re-examine the relevant facts surrounding several allegations raised by a radiological worker at the Calvert Cliffs Nuclear Power Plant, as a result of additional discussions with the worker and his attorney. These allegations had previously been reviewed by NRC Region I and the resulting findings were documented in Combined NRC Inspection Report Nos. 50-317/84-25 and 50-318/84-25, which was transmitted to the licensee on December 10, 1984. The worker was informed about the status of the NRC followup on the allegations in a letter from NRC Region I dated November 21, 1984.

During a recent discussion between the worker and the NRC Region I staff on June 24, 1985, the worker maintained that the following concerns were not fully addressed by the NRC or the licensee:

- a. The licensee changed his NRC Form 4 without his consent;
- b. The licensee did not determine his prior occupational exposure before allowing his exposure to exceed 1250 millirem per quarter;
- c. He received a potential exposure in excess of regulatory limits;
- d. The licensee improperly placed a new address and date on a previously signed release form, permitting the licensee to obtain his exposure history; and,
- e. His name was improperly removed from the licensee's computer list of individuals whose exposure should not exceed 1250 millirem per quarter.

During this inspection these concerns were re-examined by reviewing the individual's exposure records. Licensee's documented actions were also reviewed by the inspector. As a result of this

re-evaluation, the allegations were substantiated, in part, as more fully set forth below.

3. Exposure Control

Certain aspects of the licensee's external exposure control program were reviewed against the criteria contained in 10 CFR 20.101, "Radiation dose standards for individuals in restricted areas". The licensee's performance relative to these criteria was determined by reviewing radiation exposure data, combined NRC Region I Inspection Report 50-317/84-25, and 50-318/84-25, and other supporting documents.

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

The inspector determined that an individual was hired at the Calvert Cliffs site by a security firm during March 1982. Documents reviewed indicated that the licensee made an attempt to acquire the individual's occupational exposure history, but was not successful in that needed exposure information was not received from the U. S. Army. During the period of October - December 1983, the licensee's radiation exposure records show that the individual received a total dose of 1672 millirem. In addition, during the period of April 1 - June 30, 1984, the same individual received a whole body exposure of 1658 millirem. In each case, the licensee had not determined the individual's accumulated occupational exposure prior to the exposure.

10 CFR 20.101(a), "Radiation dose standards for individuals in restricted areas", states that except as provided in paragraph 20.101(b), a licensee may not cause any individual in a restricted area to receive in any period of one calendar quarter a whole body dose in excess of 1250 millirem.

10 CFR 20.101(b) states that a licensee may permit an individual in a restricted area to receive a whole body dose in excess of 1,250 millirem provided: The licensee has determined the individual's accumulated occupational dose to the whole body on Form NRC-4, or on a clear and legible record containing all the information required in that form; and has otherwise complied with the requirements of 20.101(b) and 20.102.

Exposing an individual to a whole body dose in excess of 1,250 millirem in a calendar quarter prior to fulfilling all of the requirements of 10 CFR 20.101(b) represents an apparent violation of the regulations (317/85-17-01 and 318/85-15-01).

Although these exposures constitute an exposure in excess of federal limits, they do not constitute a significant safety issue, since the individual's exposure was being controlled to less than 3 Rems per quarter, a limit that would have been authorized had the licensee appropriately completed the Form NRC-4 prior to these exposures. Nonetheless, it is of concern to the NRC that the

licensee's dosimetry controls permitted the exposure limit of 1.25 Rems per quarter to be violated without completion of required occupational radiation exposure records.

In Combined Inspection Report 50-317/84-25 and 50-318/84-25, it was noted that the licensee had performed a calculation pursuant to 10 CFR 20.102, "Determination of prior dose", which allowed the establishment of a 3 Rem per quarter limit. The calculation, although done properly, was performed by the licensee after the licensee had identified the over-exposures and was involved in the assessment of their significance. As stated in 10 CFR 20.102 such a calculation must be performed before permitting any individual to receive an occupational exposure in excess of the limits specified in 10 CFR 20.101(a).

10 CFR 2, Appendix C, instructs the NRC not to issue a notice of violation under certain conditions, in an effort to "encourage and support licensee initiative for self-identification and correction of problems." Previous correspondence on the concerns raised by the allegations in Inspection Report Nos. 50-317/84-25 and 30-318/84-25 concluded that this criteria had been satisfied. However, further evaluation has shown that the exposure was never reported as required by 20.405(a) and (b) and therefore, we are issuing the apparent violation at this time.

#### 4. Reports of Overexposures

10 CFR 20.405(a) requires each exposure of an individual to radiation in excess of the limits specified in 10 CFR 20.101 be reported in writing to the U.S. Nuclear Regulatory Commission, Document Control Desk, Washington, DC 20555, with a copy to the appropriate NRC Regional Office, within 30 days of the occurrence. Each such report must describe the extent of exposure to individuals to radiation including:

- estimate of individual exposure as required by 10 CFR 20.405(b)
- levels of radiation involved; and
- corrective steps taken or planned to prevent recurrence.

The licensee determined that on two occasions (details, Paragraph 3 of this report) an individual was exposed to radiation in excess of the limit specified in 10 CFR 20.101(a).

No written reports were submitted to the NRC in accordance with these requirements. Failure to report these overexposure constituted an apparent violation of 10 CFR 20.405 (317/85-17-02 and 318/85-15-02).

## 5. Allegation Concerns

Based on the information obtained as a result of this inspection, each of the alleged concerns as expressed in Section 2 can be addressed as follows:

- a. Allegation - The licensee changed his NRC Form 4 without his consent.

Finding - The records indicate that the alleged's original Form 4 may have been changed, apparently to obtain a more complete exposure history on the alleged. During the June 24, 1985 meeting, the alleged indicated this was done without his consent. The alleged, previously informed the Senior Resident Inspector that the change had been performed with his consent. Baltimore Gas and Electric Company is requested to address this concern in its response to the enclosed notice of violations.

- b. Allegation - The licensee did not determine his prior occupational exposure history before allowing his exposure to exceed 1250 millirem per quarter.

Finding - This allegation is substantiated and has resulted in the issuing of the enclosed notice of violation (50-317/85-17-01 and 50-318/85-15-01).

- c. Allegation - The licensee improperly placed a new address and date on a previously signed release form permitting the licensee to obtain his exposure history.

Finding - Our independent review of records indicate that this allegation is substantiated. The licensee's actions apparently were an attempt to obtain as complete an exposure history as possible on the alleged. Baltimore Gas and Electric Company is requested to address changing a release form in its response to the enclosed notice of violations.

- d. Allegation - His name was improperly removed from the licensee's computer list of individuals whose exposure should not exceed 1250 millirem per quarter.

Finding - A review of your computer records indicates that the alleged's name was improperly removed from the list of individuals whose exposure should not exceed 1250 millirem per calendar quarter. This

resulted in the violation cited above in Section 3 (317/85-17-01 and 318-85-15-01). Baltimore Gas and Electric is required to address this matter in accordance with Appendix A to this Inspection Report.

e. Allegation - He received a potential exposure in excess of regulatory limits.

Finding - This allegation is substantiated and has resulted in the issuing of the enclosed notice of violation (50-317-17-01 and 50-318/85-15-01).

6. Exit Interview

Discussions were held with licensee representatives in a telephone conference call on July 12, 1985. The inspector summarized the purpose and scope of the inspection, and the inspection findings.