

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-317/90-32
50-318/90-32

Docket Nos. 50-317
50-318

License Nos. DPR-53
DPR-69

Licensee: Baltimore Gas and Electric Company
Post Office Box 1475
Baltimore, Maryland 21203

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

Inspection At: Lusby, Maryland

Inspection Conducted: November 26-29, 1990

Inspectors: *J. Furia* 12-18-90
for J. Furia, Senior Radiation Specialist, date
Facilities Radiological Protection Section
(FRPS), Facilities Radiological Safety and
Safeguards Branch (FRSSB), Division of
Radiation Safety and Safeguards (DRSS)

T. Dragoun 12-18-90
for T. Dragoun, Project Scientist, Effluents date
Radiation Protection Section (ERPS), FRSSB,
DRSS

W. Pasciak 12-18-90
for W. Pasciak, Chief, FRPS, FRSSB, DRSS date

Inspection Summary: Inspection on November 26-29, 1990 (Combined
Inspection Report Nos. 50-317/90-32; 50-318/90-32)

Areas Inspected: Routine unannounced inspection of the radiation protection program including: management organization and control, ALARA, plant outage operations and implementation of the above programs.

Results: Within the areas inspected, one apparent violation was identified (Section 3.4).

DETAILS

1.0 Personnel Contacted

1.1 Licensee Personnel

- J. Carlson, Training Coordinator
- * S. Cowne, Senior Engineer - Quality Assurance
- * R. Heibel, Manager, Quality Assurance
- S. Hutson, Supervisor, Radiation Control - Operations
- * P. Katz, Superintendent - Technical Support
- * L. Larragoite, Senior Engineer - Compliance
- N. Millis, General Supervisor - Radiation Safety
- * G. Phair, Assistant General Supervisor - Radiation Control & Support
- E. Reimer, Plant Health Physicist
- J. Roller, Training Instructor
- * L. Smialek, Senior Plant Health Physicist
- * J. Volkoff, Compliance Engineer
- * B. Watson, Plant Health Physicist

1.2 NRC Personnel

- A. Howe, Resident Inspector
- T. Kim, Resident Inspector
- * L. Nicholson, Senior Resident Inspector

* Denotes those present at the exit interview on November 29, 1990.

2.0 Purpose

The purpose of this routine inspection was to review the licensee's programs concerning ALARA, radiation protection during an outage and during normal operations, and to review the licensee's changes in management structure which affect the radiation protection program.

3.0 Radiation Protection Program

3.1 Organization and Structure

Since the last inspection, the licensee had placed the Radiation Safety organization under the Superintendent - Technical Services, who in turn reported to the Plant Manager. Previously, the Radiation Safety organization reported to the Manager - Quality Assurance. Within the Radiation Safety Staff, the management structure had remained the same, however personnel new to their positions occupied the Radiation Control - Operations and Radiation Control - ALARA supervisory positions. All supervisory positions were filled at the time of this inspection, with the exception of the Nuclear Plant Support Supervisor position. Short term

licensee plans were to fill this position with senior Health Physics Technicians on a rotational basis until a permanent replacement could be found. Most of the technician positions, added during a recent staff expansion, have been filled. There was also six permanent janitorial positions added for ongoing plant decontamination projects supplemented by 16 contractors who assist with the 'plant restoration' project described in Section 3.4. The inspector concluded that staffing is adequate.

3.2 ALARA

The ALARA program for the site was under the supervision of the Supervisor, Radiation Control - ALARA. The current supervisor previously served as a senior Health Physics Technician. The previous Supervisor was now the Supervisor, Radiation Control - Operation. Work conducted during the extended outages at both Units 1 and 2 demonstrated a clear understanding of the underlying principles of ALARA. Management support of the ALARA program, as demonstrated by the purchases of specialized tools and mockups of the pressurizer and steam generator, was extensive. Review of the licensee's post job analysis of the pressurizer heater replacement/repair indicated that the licensee had conducted a careful analysis and continued to look for work improvements to reduce the dose to the workers. Post job analysis of the other tasks conducted during the outages, especially the work conducted on the steam generator was not yet available, and will be reviewed during a later inspection.

At the time of this inspection, the licensee was experiencing a nitrogen leak in the Unit 1 Containment, which required several at-power entries. These entries had to be made in Self Contained Breathing Apparatus (SCBA) due to a lower than permitted oxygen level in the containment. Additionally, the licensee has a long standing problem with neutron streaming in the containments, especially when above the 69' level. When the cause of the nitrogen leak could not be readily determined or repaired, the Radiation Safety staff took actions and gained management concurrence to reduce power at Unit 1 prior to any further entries.

In accordance with Calvert Cliffs Instruction (CCI) 809D, "ALARA Program", all employees were authorized to make suggestions for improvements to the ALARA program, or to propose improved work methods to reduce dose on the job. All suggestions were logged in and reviewed in a timely manner. The inspector had no further questions in this area.

3.3 Special Work Permits

Special Work Permits (SWPs) were written by the licensee's Radiation Controls - Operations group, and copies maintained at the Radiation Control Shift Supervisor's office. A review of the licensee's Radiological Concern Reports (RCRs) indicated a control problem in this area. The licensee's current system requires an individual entering the Radiologically Controlled Area (RCA) to first check in with the RCSS and then check in at the dosimetry desk for zeroing of their self-reading dosimeter and signing in on their SWP. Several individuals have failed to check in with the RCSS and signed in at the dosimetry desk on expired SWPs. The dosimetry desk does not have copies of the current SWPs to verify the information provided to them by the worker. The licensee was considering an interim measure of keeping a listing of current SWPs at the dosimetry desk. The long term solution for this issue will be the licensee's installation of a computer control program which will not permit the worker to enter the RCA on an expired SWP. The resolution of this issue will be examined during a future inspection.

3.4 Plant Walkdown and Tour

As part of this inspection, several walkdowns/tours of the PCA were conducted by the inspector. Currently the licensee is conducting a restoration project in the Auxiliary Building which involves extensive decontamination efforts followed by refurbishment of these areas, including the application of special paint coatings to the floors. Through this restoration effort, the licensee intends to be able to reduce the number of personnel contaminations in the plant. To date, the licensee has stressed completion of plant areas that have significant area dose rates when the units are on line, with those Unit 1 areas completed prior to the Unit restart, and the same goal for those areas on the Unit 2 side. While the units are at power, the licensee planned to concentrate on general areas and walkways. This excellent initiative should help in making significant reductions in the number of personnel contaminations and in reducing the total amount of contaminated areas in the plant.

The licensee has assigned to each level of the Auxiliary Building a level Health Physics Technician, whose responsibilities include general job coverage for activities on his/her assigned level. Each level was clearly posted to require check-in with the Level Technician prior to commencing work. In the Unit 2 Containment, there was a check-in point on the 69' level, and a secondary check-in point at the 10' level. Adequate staffing levels of Health Physics Technicians were noted in all parts of the RCA, especially the Unit 2 Containment. Additionally, in the Unit

2 Containment, the licensee utilized six closed circuit cameras to monitor work in progress on the 69' and 45' levels, and two closed circuit cameras on the 10' level. At the time of this inspection, jobs in progress within the Unit 2 Containment included unit refueling and vacuuming of the reactor cavity after refueling, cleaning and maintenance on the reactor head, electrical penetration work, and reinstallation of insulation on piping. All jobs appeared to be adequately supervised by Radiation Control personnel. The inspector had no further questions in this area.

A review of plant record by the inspector indicated that on three separate occasions plant personnel entered high radiation areas without a dose rate meter. Twice, in January and June, 1990, two contractor personnel were discovered in high radiation areas without a dose rate meter. In February, 1990, a plant operator left his dose rate meter outside a high radiation area, and then entered the area. This is a violation of 10 CFR 20.203 and Technical Specification 6.12.1.a for each unit (50-317/9032-01: 50-318/90-32-01).

4.0 Personnel Dosimetry

During the work inside the reactor containment on the Nitrogen leak the technicians reported large differences between the neutron exposures calculated from portable neutron survey meter readings and TLD dosimetry results. As a result of these anomalies, the inspector reviewed the records associated with the October 1990 recertification of the TLD system. The inspector determined that the TLD system was approved for monitoring of neutron exposures and that the accuracy achieved was very good. The inspector had no further questions.

5. Exit Interview

The inspector met with the licensee representatives denoted in Section 1 at the conclusion of the inspection on November 29, 1990. The inspector summarized the purpose, scope and findings of the inspection.