

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-317/92-08
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Docket Nos. 50-317
50-318

License Nos. DPR-53
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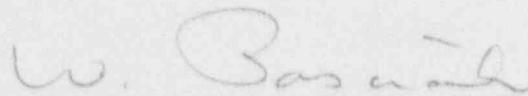
Licensee: Baltimore Gas and Electric Company
Post Office Box 1475
Baltimore, Maryland 21203

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

Inspection At: Lusby, Maryland

Inspection Conducted: February 24-27, 1992

Inspectors:  2/28/92
J. Furia, Senior Radiation Specialist, date
Facilities Radiation Protection Section
(FRPS), Facilities Radiological Safety and
Safeguards Branch (FRSSB), Division of
Radiation Safety and Safeguards (DRSS)

Approved by:  2-28-92
W. Pasciak, Chief, FRPS, FRSSB, DRSS date

Areas Inspected: Announced inspection of the transportation, solid radwaste and radiation protection program including: management organization, Process Control Plan, assurance of quality, training and radiation control during normal operations, and implementation of the above programs.

Results: Within the areas inspected, one non-cited violation in the area of transportation (Section 3.2) was identified.

DETAILS

1. Personnel Contacted

1.1 Licensee Personnel

- J. Carlson, Supervisor, Technical Training
- * R. Denton, Plant Manager
- * G. Detter, Director, Nuclear Regulatory Matters
- C. Ficke, Principle Radiological Shift Technician
- * R. Franke, Compliance Engineer
- * M. Hofle, Quality Assurance Unit
- * S. Hutson, Supervisor, Radiological Control - Operations
- * P. Katz, Superintendent - Technical Support
- * J. Lenhart, Supervisor, Materials Processing
- * G. Phair, Assistant General Supervisor, Radiological Control and Support
- * M. Rigsby, Plant Health Physicist
- D. Showalter, Training Coordinator
- J. Szymkowiak, Plant Chemist
- * B. Watson, General Supervisor - Radiation Safety
- W. Williams, Project Manager
- J. Wood, Lead Auditor, Quality Assurance

1.2 NRC Personnel

- * C. Iyon, Resident Inspector

* Denotes those present at the exit interview on February 27, 1992.

2. Purpose

The purpose of this safety and health inspection was to review the licensee's programs for processing of plant liquids, collection and processing of radioactive wastes, transportation of radioactive materials and radiation safety during normal operations.

3. Transportation and Radwaste

The licensee's radwaste and transportation program was managed by the Supervisor, Materials Processing, who reported to the General Supervisor - Radiation Safety. Scaling factors sampling and analysis were the responsibility of the Plant Chemistry Department. This program has remained essentially the same since the last inspection.

3.1 Radwaste Processing

The licensee's program for processing plant liquids has remained generally the same since the last inspection in this area. Liquids were processed through a series

of mechanical filters and demineralizers, with the resultant spent resins combined from the various systems at the Spent Resin Metering Tank, and then dewatered in polyethylene liners. Mechanical filters were placed in liners for disposal, or were first encapsulated in cement. At the time of this inspection, the licensee was in the process of testing a new resin liner fill head for use, which allowed for more remote monitoring of fill operations, sampling for determination of scaling factors and quicker disconnect of fill and dewatering lines. The licensee's goal was to have this new system in place and operational within the next few months.

The licensee utilizes the RADMAN computer code (WGM, Inc.) for preparation of shipping and burial manifests. Scaling factors for hard to measure radionuclides were derived on an annual basis for resins, and a semiannual basis for Dry Active Wastes, via the submission of representative plant samples to TMA/Norcal for analysis. Results were provided to the Chemistry Department, who developed the scaling factors to be utilized, and provided these results to the Supervisor, Materials Processing.

The licensee collects Dry Active Wastes (DAW) from throughout the Radiologically Controlled Areas (RCA), and transports them to the Materials Processing Facility for sorting and loading in bulk into SeaVans. This material was sent to the SEG facility (a Westinghouse Company), where it was further segregated, with some materials incinerated, and others sent to a waste supercompactor. The licensee's formerly utilized waste shredder/compactor was being maintained ready for possible use, however, all DAW was now being sent off-site for processing.

3.2 Transportation

As part of this inspection, the records of radioactive materials/radwaste shipments listed below were reviewed.

<u>Shipment #</u>	<u>Activity (Ci)</u>	<u>Volume (cu ft)</u>	<u>Type</u>
91-090	3.06E-01	570.0	DAW
91-091	4.31E-02	990.0	Laundry
91-092	2.22E+03	7.4	Hardware
91-093	2.10E+03	14.6	Hardware
91-094	2.95E-01	2560.0	DAW
92-001	1.49E-08	0.8	Samples
92-002	4.07E-02	990.0	Laundry

<u>Shipment #</u>	<u>Activity (Ci)</u>	<u>Volume (cu ft)</u>	<u>Type</u>
92-003	1.64E+01	120.3	Resin
92-004	6.42E-02	900.0	Laundry
92-005	4.71E-09	0.8	Samples
92-006	1.73E-08	0.8	Samples
92-007	1.40E-03	810.0	Resin
92-008	1.33E+02	120.3	Resin

All shipments were determined to have been made in compliance with the applicable requirements contained in 10 CFR Parts 20, 61 and 71, and 49 CFR Parts 100-177, with the exception of shipment 92-003, as noted below.

Shipment 92-003 was made on January 21, 1992, and consisted of dewatered spent resin to be disposed of at the Barnwell Waste Management Facility. The manifest which accompanied the shipment listed a total activity of 2.08E+02 Curies. Subsequent to the shipment leaving the site, the licensee determined that a calculational error had occurred whereby the total activity for this shipment, and most of the individual isotopic activities were over reported by approximately 20%. This error was attributed to failure to properly follow an existing procedure. Subsequent re-analysis by the licensee indicated that the total activity of the shipment was in fact 1.64E+02 Curies, and a corrected manifest was sent to Chem Nuclear Systems, Inc., the operator of the Barnwell Waste Management Facility. This over reporting of the activity did not cause a change in the waste classification or in the shipping name, and was, in fact, in the conservative direction. Improper manifesting of a waste shipment is an apparent violation of both 10 CFR Part 20.311 and 49 CFR Part 172.203. Subsequent to this event, the licensee undertook to retrain its Materials Processing personnel in procedural compliance, especially in the area of manifesting shipments. Additionally, all shipments using the RADMAN computer code will now be subject to verification by hand calculations, and reviewed by a plant health physicist. This violation will not be subject to enforcement action because the licensee's efforts in identifying and correcting the violation meet the criteria specified in Section V.G. of the Enforcement Policy.

In addition, the inspector reviewed the following procedures related to the processing, packaging and transport of radioactive wastes.

RSP 2-206, Rev 7, "CNS 1-13G Cask Handling Procedure"

RSP 2-217, Rev 0, "CNSI High Integrity Container Handling and Loading Procedure"

RSP 2-220, Rev 2, "Solid Waste Processing Resin Transfer"

RSP 2-227, Rev 3, "Underwater Liner Loading"

RSP 2-229, Rev 3, "CNS 8-120A Cask Handling Procedure"

These procedures were determined to be complete, and to accurately reflect current plant operations.

3.3 Interim Radwaste Storage

In preparation for the anticipated closure of the three existing waste disposal sites on January 1, 1993, the licensee has undertaken to develop a strategy for interim radwaste storage on site. The Materials Processing facility was constructed with 75,000 cubic feet of storage space for packaged DAW. Resins and filters were anticipated to be placed in On Site Storage Containers (OSSCs), however, the final design of a storage location for an OSSC farm was not available at the time of this inspection. The licensee had assigned a project manager to this effort, and had available a budget for the construction of an OSSC storage area in 1992. Continued management support is necessary to ensure that this activity continues to progress, and is completed by early 1993.

3.4 Assurance of Quality

The licensee's program for the assurance of quality in the radwaste and transportation area consisted of vendor audits, plant audits, surveillances and quality verifications. Vendor audits were conducted for those companies which provided the licensee with NRC approved shipping casks. At the time of this inspection, these casks were being supplied by Chem Nuclear Systems, Inc. The licensee annually conducted an "Investigation of Supplier's Quality Assurance Program", and bases review on audits conducted by the Nuclear Utilities Procurement Issues Council (NUPIC). The licensee had on file records of the most recent audit of Chem Nuclear, conducted by the Nebraska Public Power District, #SA90-32, dated December 13, 1990.

The licensee conducted annual audits of its radwaste program. Audit 91-12, dated September 27, 1991 was the most recent audit of this program. One finding involving material in storage at the Materials

Processing Facility was identified in the audit, and closed prior to the audit being issued. There were no other findings or recommendations involving items of safety significance.

The licensee conducted one surveillance of radwaste activities in 1991. Surveillance S-91-39 examined the transfer and shipment of spent resin. No surveillances of radwaste activities were scheduled for 1992 at the time of this inspection. In addition, the licensee's Quality Verification unit reviewed paperwork and observed packages being prepared for shipment. These verifications were documented as sign-offs on the licensee's waste processing and transportation form, and were retained with the individual shipment records.

3.5 Training

The licensee's program for the training of Materials Processing personnel was the same as that established for Radcon Operations, and included both initial and continuing training. Each technician would receive approximately 8 weeks of continuing training each year. In addition, outside vendors were brought in on a regular basis to provide special training on transportation and burial site criteria. This program meets the requirements for training as set forth in NRC IE Bulletin 79-19.

4. Radiation Safety

As part of this inspection, tours of the licensee's radiologically controlled areas (RCA) were conducted while both units were operating at or near full power. The licensee had commenced staging equipment, especially scaffolding, for the upcoming refueling outage at Unit 1. In spite of this, the plant housekeeping in the RCA was generally very good, and contaminated equipment was appropriately posted.

The inspector discussed with the licensee its training program for contract technicians being brought in to assist during the refueling outage. These technicians were to be assigned support roles, such as performing surveys, taking contamination smears, and providing limited job coverage under the direction of licensee Radcon technicians. All contractor technicians were to be given an initial comprehensive exam on general health physics practices. Following this, they were to perform self-study on licensee procedures, complete job cards, and take a comprehensive examination on the licensee procedures prior to commencing any work in the RCA.

5. Exit Interview

The inspector met with the licensee representatives denoted in Section 1 at the conclusion of the inspection on February 27, 1992. The inspector summarized the purpose, scope and findings of the inspection.